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ATARI USER

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this
issue



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the USA

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reviewed

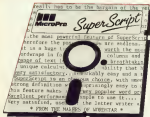
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£25 for you!

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The big show is coming

This first ever Atari Computer Show, held at the Royal London Hall March, was an outstanding success, drawing a total of 16,000 visitors - 6,000 more than expected.

Observers said that this measure of participation and popular support for the Atari range effectively re-established the company as a market leader in the UK computer industry.

This spectacular showcase returns to London on Friday Saturday and Sunday November 28 to 30 this time at the Royal Horticultural Hall, 847. Appropriately titled the Atari Christmas Show, the event

ATARI has begun shipping a product that will give the ST an ever-larger share of the business market.

The 320th Atari show will cost £284.39 and should be the last production this month, according to a company spokesman.

It will be on display at the PCW Show and large operations will be available within a few weeks", he told Atari News.

"We have already begun shipping a few units, and developers have had time to work with the demo unit."

promise to fulfil all the wishes of seasonal shoppers waiting to fill their stockings with the latest Atari hardware and software.

New programs and add-ons for the ST series and 8-bit range from both sides of the Atlantic will be launched at the show and there will be opportunities to question the UK's leading experts in the field of Atari computers.

The show will be open from 10am to 5pm Friday and Saturday, 10am to 4pm Sunday and there is £1 off tickets ordered in advance from organisers Deborah Sedgwick.

Atari bids for UK schools market

ATARI is set for a major breakthrough into the UK schools market this year.

The key to the new thrust is a Basic language emulator which makes the ST compatible with the massive software library of the BBC Micro, the UK's most popular educational machine.

Len Payer, technical manager of Atari UK, says: "The emulator runs standard BBC Basic as fast as the Atari machine itself."

It has had an extensive workload at six test sites, including schools, by experts familiar with BBC Basic.

"They were all very pleased with the software, which is 100 per cent compatible as a Basic interpreter and 96 to 97 per cent successful as a BBC operating system emulator."

Atari points out that the emulator is intended to replace the BBC Micro - the analogue port can't be emulated and the

BBC Basic emulator is the key

emulator is missing.

But there are hooks in it for BBC compatibility which is promised at a later date, and a network filing system for Ecoset is also planned.

The intent of the emulator is nicely timed to coincide with the start of a new school year and educators who will get a chance to see it in use at the Atari stand at the PCW Show.

Atari bosses are confident it will significantly increase the ST's penetration of the education market, building on the machine's inroads into higher

education.

"We know that many local education authorities are holding back on their purchases of new hardware until they see the BBC emulator," said Len Payer.

"They have been impressed with the impact the ST has had in colleges and universities with its price and versatility."

Ron Harding, Atari UK marketing manager, said: "Almost all British universities have ST machines, some a large number of them, and we have sold to several LEAs."

It has always been an intention to open up the machine to a wider range of software, and the emulator allows ST users to capitalise on another large spread of programs of particular value in the secondary education sector.

The emulator has a single unit price of £39.99, but there will be bulk discounts for educational purchases.

Micro prize

ATARI software publisher Adisearch is running a competition with a £1000 in the prize.

Purchasers of Adisearch games get a Screen Saver Challenge card and have to use their skill to decide which game the illustration depicts.

If they get it right they can win a free game, an Adisearch badge, or money-off tokens. Even better, go into a draw for the top prize, an Atari 130EX.

Pascal compiler

PROFESSIONAL languages specialist Progress Software has released its Pro Pascal language compiler for the Atari ST.

Turbo source code will port to the Atari with minor modifications and Pro Pascal also has full IBM ASM and VBI bindings. Price: £125.



ABANDONING conventional mechanical switching, Mastermouse has based its new joystick for the Atari range around micro-switches.

The Mastermouse is said to incorporate an innovative

guaranteeing a tactile response to commands faster than other joysticks.

Available at the end of this month, the Mastermouse is expected to cost between £15 and £18.

Adventure trilogy released

JAWAHS in Darkness is the first of the Level 9 trilogy to be released by Rainbow Software for the Atari 8000, and ST.

Extensively re-written, the package comprises three of the most popular Level 9 adventures - *Colonel Adventure*, *Adventure Quest* and *European Adventure*. In addition to a totally re-written game, the package features a massive vocabulary and hundreds of added graphics with more than 8000 colour illustrations and 900 locations.

Jaws of Darkness is available for the 8000, in three cassette packs or on disc for £14.95 and on disc only for the ST priced at £19.95. The package also contains a 64 page novel. The *Darkness* discs which contain a 12 page play guide.

MORE SMASH HITS

THE 3rd volume in English Software's compilation series *Atari Smash Hits*, has been released for the 80/86 range.

It features the best-selling *Watergate* plus *Drop Duty*, *Madison* and *Guerrilla*. It comes from Smash-UK Gold.

Three cassettes come £9.95 plus disc £14.95.



Still trekking...

MARKING the 25th anniversary of the cult TV series *Star Trek*, Beyond Software has been supported by Paramount to produce the first official science-fiction game based on

the show and its *Trekspire* characters.

The Atari ST version will be launched next month and coincide with BBC Television re-running of the series.

Compact accounts

ATN Accounting originally for the Atari ST which claims a unique comparison of data allowing 80,000 transactions on each double-sided disc has been released by Business Applications Software.

It has full double entry systems with automatic VAT extraction, trial balance, leading account, profit and loss account, balance sheet and VAT return between any two dates.

Transactions can be entered in any order automatically sorted by date, and there is automatic indexing of up to 3,000 accounts per disc. Price £129.

Also new for the ST is *840 Database*, a general purpose program providing unlimited expansion by allowing a database to be spread over as many discs as required. Price £199.

A fully integrated combination of the above programs - *840 Database System* - is also available at £349. It comes configured to handle stock control, invoicing, mailing lists, purchase orders and accounting ledgers.

Shanner deal

TOP American software distributor Shanner International has concluded a tie-up deal for its Atari ST products to be marketed exclusively in Europe by Poltek.

First Shanner product to be released by Poltek is the Real Time Clock cartridge, said to be the hottest selling ST item in the US.

Notable products such as *Atari 26* have been being introduced in America, Canada and Asia by Shanner as part of the new deal.

Atari denies new Basic claim

REPORTS of a new Basic from Microcosm to replace the much criticised version bundled with the Atari ST are misleading, the company says.

Microcosm announced in a press release that it would be demonstrating a new Basic computer at the PCW Show and that it expected it to be bundled with the ST "in the very near future".

The announcement was welcomed by ST users around the Digital Research circle banded with the ST, which suffers from inaccurate timing, print and unreliable I/O handling.

But Atari UK chief Max Bamberghie told *Atari User* "What Microcosm has said is not necessarily part of our corporate plans."

"We are very aware about

statements from third party suppliers promising new products for our market, particularly in view of past experience like the one on the scene of GenWise and GenFont."

"While it is Atari's intention to produce products for the ST - to which we have made the machine as transparent as possible - we are extremely circumspect about claims for products when we have not had the finished version in our hands."

Microcosm product manager Andrew Spencer said his representative agreement with Atari prevented him from commenting further.

An Atari official confirmed that an evaluation copy of Microcosm Basic for the Atari

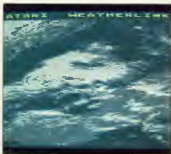
ST may have been sent to the company's headquarters in America. But I don't believe this can be anywhere near a completed version of the product and in any event we haven't agreed with anybody about bundling it with the ST."

Books for ST series

NINE books about the Atari ST series have been published by Queens Writers with support from Atari. They range from introductory books for the absolute beginner through to advanced works on programming techniques and professional business applications for the more specialist user.

Titles are *Introducing the Atari ST Using Basic* on the

Atari ST Using Basic on the Atari ST, *Using Database* with the Atari ST, *Using Graphics* on the Atari ST, *Practical Usage* on the Atari ST, *Advanced User's Guide* to the Atari ST and *Business Applications* with the Atari ST. With the exception of the *Advanced User's Guide*, which costs £13.95, they are all priced at £7.95.



Now Ataris tap weather maps

A SOFTWARE breakthrough means that all Atari 8-bit users can now see what Britain's weather looks like from outer space.

With their Atari 8-bit users now able to see what Britain's weather looks like from outer space.

All this is possible with WeatherLink, the exclusive service on MicroLink, the UK's national on-line database. It enables users to have an extensive view of weather patterns developing over the UK.

Using a monitoring service based in Kent, WeatherLink intercepts signals from the NOAA satellite and converts

them into electronic data.

The resulting aerial looks on to the satellite every time it appears in orbit. It disappears from view some 18 minutes later. The same sequence is followed on average four times a day.

Live pictures produced by NOAA hovering 450 miles overhead — it takes two at a time, one in visible light, the other infra red — clearly show that part of the world from North Africa through Europe and Great Britain up to Iceland.

The pictures are recorded on computers at the tracking station. A converter then takes the image and makes it far transmission over standard telephone lines to the main

MicroLink computer.

Once a MicroLink subscriber logs on, all he needs to do is put down the information file.

To achieve this he requires specially written software on the MicroLink menu — the Atari 8-bit version of which has only just become available.

The new program comes courtesy of Andrew Willey, technical editor of Atari User.

The machine code program displays the files in a new way for downloading from the system. In addition there is a convert routine to place the Expanded Atari files into a form the Atari will understand.

Once both programs have been downloaded the user is ready to receive the latest pictures from outer space.

The programme will work with any Atari 8-bit computer with a minimum of 48k, says Andrew Willey. So all you need is a modem and a MicroLink account to become your own weather forecaster.

In brief

MSX for the Atari 8-bit range is a video digitiser from Haba Systems.

It takes monochrome inputs from video cameras or VCR and DVCs, digitises them and stores the images on disc. Colours can then be added. Price: £249.95.

THE new 8-bit Speller Checker from Frontier Software has a 30,000 word dictionary, is fully user adjustable, and operates on all resolutions.

It will check files from the Word, Final Word, Merlin, HabiWriter, SP Writer and many other 8-bit word processors. Price: £19.95.

THE latest offering from CRL for the Atari 8-bit machines is a space adventure called Sunstar.

The player is required to pilot the supply ship Starfish on a mission to recover strange crystals vital to the world's survival, while avoiding destruction from strange pulses which emanate from the planets.

Sunstar costs £9.95 on cassette and £14.95 on disc.

THE Terminal ST from Acad provides thorough simulation of the popular Mac VT100 and Tektronix 4010 terminal types, providing a valuable workstation at low cost.

Key features include bi-directional file transfer, user definable function keys, full GDSI implementation, comprehensive Help facilities and slave printing options.

Price: £59.95.

EMUP is a range of business application programs being developed for the Atari ST by Kyle Data in the Kyle Wagon system. It was first written in 1984 for CP/M machines three years ago and has now been re-written to make use of the additional features of 80386 or 486 PCs.

The automatic payment option now runs more than three times faster than on the 8086. CP/M85 machine claims Kyle Data Price: £200.

ALL program listings in Atari User are now available for free downloading on MicroLink, the UK's fastest growing electronic mail service. They join hundreds of programs already available in the telesoftware archive, one of the most creative uses of MicroLink.

So you would like to write for Atari User ...

HERE at Atari User Towers we can always show visitors a huge pile of submissions which have arrived in the incoming post. We are never surprised at the variety of your programs and articles.

For example, one day we list an article on computing in Poland and the next a program to draw 3D objects on the ST.

There are no hard and fast rules for submitting articles and programs to us. We always welcome material that you think might be of interest to fellow Atari owners.

To give you a better chance of having your programs and articles accepted we'd like you to bear in mind the following points before you submit your masterpiece:

- Everything you send to us must be labelled with your name, address and the programs or article's name. A daytime telephone number would also be helpful. Any work you submit must be your own and must not have been submitted to any other magazines.

- There is a gap for a few software reviewers for both the 8 and 16 bit computers. We are looking for quality writing rather than the ability to get telephone number high scores.

Reviewers must be able to turn out a 500 word review within a few days. In most cases you will be allowed to keep the software at addition to receiving payment at the standard editorial rates.

- If you have an interesting idea for an article or a series of articles, you can always drop us a line to test it out before you get printer to paper.

- If you are submitting an article or review please print or type it double spaced - a blank line between each line of text - on one side of the paper.

Always use black print on white paper. Number each sheet and write the total number of sheets. For example "Page 4 of 7". Also include a word count at the top of the first page.

- A number of you have told us in your letters that you've written some great games, but feel that they would be too long to publish. If you are in this position, and don't know whether to submit your latest masterpiece, don't forget that we regularly publish longer listings in the

form of special bonus items on the monthly disc and cassette releases.

This also applies to anyone who has written a long machine-code program which would otherwise be difficult to print.

- Always send in your programs and articles on tape or disc. A printed listing is helpful, but if we like the program we can always take the time to list it ourselves.

If you want your cassette or disc reviewed, please enclose an size large enough to accommodate all of the material that you sent us.

- If the program is for the ST and is written in Basic or Logo send it on a disc along with the relevant language. If you send an 8 bit program on disc always make sure that it is in single density and also contains the DOS file.

- Remember to include program instructions and an explanation of your reasons for writing it. If it is a utility. Also include a sub-routine breakdown showing what happens in each part of the program.

- Include as many remarks within your programs as possible. This helps both us and the readers to understand its inner workings. Try to imagine that you are seeing it for the first time - which parts of the program are hardest to understand?

Never have a GOTO or GOSUB to a remark line, so that readers can safely leave out the remarks when they type your program into their machines.

- Get someone who has never seen your program before to test it. You'll be surprised how many bugs and mistakes will show up. Testing will also help you to write better instructions.

If you follow the above guidelines you'll not only have a much better chance of getting your work published, but you'll probably become a better programmer as well as the target.

We look forward to seeing your work inside the covers of Atari User the next issue.

Andrew Bennett

Contributors should be sent to:
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The number of bulletin boards is growing rapidly. The only way is that the vast majority are single user boards - which means lots of other people are also trying to make contact and all too often all you get is the cheapest rate. But with the MicroLink bulletin board there is no limit to the number of people using it at the same time. And so that is the number of categories that can be displayed on the board.

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The majority of MicroLink subscribers can connect to our mainframe computer in London by making a local phone call. This is possible because they use British Telecom's FSS system, which has access points all over Britain. A local phone call is all you need too, for direct access via MicroLink to all the other computers belonging to the international Telecom system.

Telemessages - at a third off

The modern equivalent of the telegram is the telemessage. Send it today. When you're in a hurry. By the time the following day (except Sundays). The service was created for people phoning their message to the operator, which costs £2.50 for 50 words. But you can now use it via MicroLink, for only £1.25 for up to 100 words! For an extra 80p your message can be delivered in an attractive greetings card.

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With MicroLink you can turn your micro into a telex machine, and can send and receive telex messages of any length. You will be able to communicate directly to 96,000 telex subscribers in the UK, 15 million worldwide - and even with ships at sea via the telex satellite network. Business people can now send and receive telexes after office hours, from home or when travelling.

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Magikal moments

Program: The Price of Magic
Price: £2.95 (essential)
Supplier: Level 3, PO Box 26
 Watton-Super-Mare, Devon
 PL24 8QR Tel: 0324
 814683

THREE I was whisked almost to the full, smoky and reeking from an over-generous application of Ambre Solaire and ready to be transformed into a sun-bronzed god. Then The Price of Magic arrived.

I should have realised the computer to lead it up there and back. Both in the hypnotic power of the Austin class a fast and graphics adventures that once it had begun to play my chances of pulling away before sunset were negligible.

A sequel to Level 3's successful Red Moon, The Price of Magic is available for ZX, and 801 systems and is limited-protected. Your aim is to defeat the sinister Mylar who has gotten a little too big for his fully-timed carpet slip-

pers.

There are no creatures to collect. The theme of the game is magic — you must acquire and learn to use 18 spells.

At the start you know so much about magic as Frank Bruns knows about the mating rituals of yaks. But to win you must know everything — about spells, that is.

Each spell requires certain objects to follow through before it will work as it is essential to find as many objects as you can.

Once you re-discovered the name of a spell — they tend to be scattered around as inscriptions on ancient parchment and other less obvious items — it is easy enough to find out what object goes with it.

Just CAST it! Well, or whatever — if you haven't already got the appropriate object the program will tell you which one you need.

However, even when you've got the right object you're still got to work out what effect the



spell has and when and where to best use it. Not so elementary, my dear Watson.

There's a huge of locations to explore without fear of coming to a complete stop because of an obscure puzzle.

There are plenty of objects too, and you need and up looking like an unsuccessful rig and bone merchant if you take everything sound with you.

I preferred to play with the illustrations — over 300 of them — turned off. They're attractive enough but added little to my enjoyment and sometimes seemed to conflict

with the textual description.

Among the many superb features are the sophisticated parser (I loved being able to examine all objects in one go), huge vocabulary, extensive text, very fast entry and response, good combat system and character interaction.

Another thought-provoking from the level 3 stable. Long may it continue to produce them.

Bob Chappell

Sound	4/5
Graphics	3
Playability	10
Value for money	5
Overall	5

Ageing Rambo

Program: Shadow
Price: £7.99 (essential)
Supplier: Amstrad/Amiga
 Software, c/o J. B. J.
 United Way, Huddersfield
 Wighams, W. 142 Tel:
 021-294 3389

In the early days of the Amstrad certain games appeared that were to become legends — for example Star Raiders and Battlezone.

Another superstar was Shadow, a fast and furious shoot 'em up. When it first appeared it cost about £30 but now it can be yours for just one tenth of the price.

In its day Shadow was superbly well-kept moving graphics and absorbing and colourful wells. I must admit it looks rather crude compared

to today's standards, but even now it has an appeal that most current games lack.

Shadow is an American farm for a private eye, but in the game you are more of a Rambo character who shoots anything that moves.

You are the Shadow sent to hunt down and destroy the Shadow in his lair. The lair consists of a large building split into four levels of 32 rooms each.

Each level is inhabited by Robot Droids, evil Genies and Snake Jugglers. These nasty friends of the Shadow have only one intention in their memory banks — to wipe you out.

Armed with both Ice Shots — long, short High Intensity Vapourisers — plus Journey through the colour-coded



levels starting with black, to assist through blue and green to red, the most difficult.

Each level has four keys and four keyholes scattered at random about the complex. The keys are coded for each keyhole, so you must visit almost all the rooms.

Moving over a keyhole causes one wall to disappear allowing you to progress deeper into the complex.

To the fast time buyer I would recommend this classic but don't expect to be stunned by the graphics. What you will get is one of the most addictive games in a long time.

Paul Irvine

Sound	7
Graphics	5
Playability	8
Value for money	10
Overall	8

Nice one, Ollie

Program: Ollie's Follies
Price: £3.99
Supplier: Amerigo
Software: Level 2 & 3
Address: 104g, Market, Birmingham B15 7AA. Tel: 021 358 3388

Ollie's Follies is yet another platform game, but what it lacks in the novelty department is more than made up for in the playability stakes.

Like most games of this type, the object is to progress through a number of increasingly difficult screens. In this case there are 24 of them, so you can see that that is a good deal of play in the game.

Refusing to shy straight into the game like its rivals, while on the title page the program does leave this into a brief preview of all the screens, sorted up in

several consecutive showings. Ollie, a young lad clad in blue dungarees, can hop, turn and run to the left or right.

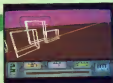
On each screen he must make his way over a series of platforms and ramps to an exit which leads to the next screen.

Although Ollie can drop short distances, if he falls too far he begins to spin head over heels and loses one of his five lives.

Some of the platforms are powered by revolving rotors. If Ollie touches one he loses a life.

Scattered around the screen are some floating balls—these turn out to be a nightmare which once touched sends him to a different life.

The effort only lasts for about five seconds, but while it does—and a single bubble easily to tell you—Ollie has no



power to touch and destroy rotors with impunity.

Screen 3 introduces large fans which cause him to get blown off the ramp if he's not strong enough. He must also dive down a large tube at the bottom of which is a platform guarded by a wandering robot.

The screens get more and more difficult with added hazards and ever more cunning platform layouts.

There are sliding ladders, rotors, fire teleporters, light-

ness springboards, belts of lightning and laser walls.

Ollie's Follies is very entertaining and likely to keep you coming back for more until you're crushed. At the low price it's a fine game to bargain for.

Rob Chappell

Sound	4
Graphics	5
Playability	5
Value for money	5
Overall	5

Mercenary plus

Program: The Second City
Price: £5.99 (boxed), £3.99 (tapes)
Supplier: Avagon, 242 Alcester Road, Birmingham B2 9AG. Tel: 021 442 8819

ANY of Paul McCartney's Warrant superb Mercenary Escape from Hong Kong will sell some the new release. The Second City is not a follow-up but an alternative data set for use with Mercenary.

Buyers take heed—The Second City is not a stand-alone program and will not run by itself.

Only Mercenary owners will be able to use it since it is designed to be loaded in only when Mercenary is resident in your Atari.

Once Mercenary is loaded and the opening sequence of the great landing on Hong Kong has been completed, The Second City is installed by the usual menu-driven game procedure.

Very handy for those

intent on it. Mercenary is a fairly rare of tight action—strategy and attack action using incredibly fast 3D vector graphics. You'll believe your Atari can fly when you see it.

In this alternative scenario the green landscapes and blue skies of the tourist haven of Tang Centre City have been replaced by the red earth and purple heavens of the war-torn southern hemisphere.

At first sight things seem pretty familiar—but there is much that's new. The two civil races—Machinoids and Fat Vans—are still here and still require the services of a skilled mercenary.

Commodity values have widened though. The Polar Commanders' brother-in-law has been kidnapped here as prison governor—I stole his ship at the beginning of the game and he was not too pleased.

Entering the city is no revelation as usual, but the



rooms are even higher. More than once I found myself in a prison with movable means of escape—what are those two dots on one of the prison walls?

One room is pitch black and seems massive—it takes a long time to find the way out.

There's a plume of smoke being stirred but I can't move like the result of picking up a skull and crossbones sign—still I can't see I wasn't warned.

What makes this game stand head and shoulders above all others involving

flight sequences is the breath-taking speed of the vector graphics.

Developing over around down and through a structure is simply genius. This additional data set is worth buying for the chance it gives you in action and value an already classic game.

Stephen Woolter

Sound	4
Graphics	5
Playability	5
Value for money	5
Overall	5

Sovereign remedy

Program: Death Shadow
Platform:
Price: £14.95 (incl.
Supplier: Activision, 68 Long
Acre, Gosport, Havant,
Hants PO15 3JL, Tel.
0703 333 3443

If you have trouble with the unusual name of this fast and graphics adventure let me help you out by mentioning the subtitle — the Philosopher's Stone. Brilliant stuff, eh?

The plot concerns a kindly king who has succumbed after the death of his first wife. The remnants has given him a fair a reason who is a right many piece of work — fancy how often that one appears in adventures.

He can't wait to get his graying days on the old and laughs as he is following

the king.

Out to all the terrible gods in 800 — alive or sleeping — but unknown to king, the doomed ruler has tried to the quacks to keep well clear.

As death begins to about. Come in number 1 you live it up in the king's seat, a single hope remains. Only you, a former alchemist, who has long since hung up the galle and master can now save him.

The game opens with a nice little tour and impressive title screen — stuff and dripping candle on an ancient tome.

However the rest of the graphics are only average — simple lines, streets and houses — you know the sort of thing.

Each of the 85 locations has a large picture with text underneath. The descriptions



are fairly brief and presented in gothic-type manuscript.

You start in your house — are rooms and a left no wonder you give up shortly — and must try to leave the walled and exit-guarded town.

Developing in Germany, the game appears to have been completely translated for the UK market.

However the parser can only handle simple verb-noun commands and the vocabulary seems to have limited scope

of the more usual and accepted words.

On the plus side the pictures are drawn very neatly and there is an immediate response to input. Occasionally you're even given a hint when you ask for help.

Bob Chappell

Visual	...	4/5
Graphics	...	4
Playability	...	3
Value for money	...	4
Overall	...	4

8 bits to the bar

Program: Colleen Music Compendium
Platform:
Price: £19.95
Supplier: Colleen, 48 Bishop
Street, Penryn, Cornwall TR2
1AG, Tel 04242 446442

MUSIC Compendium is a collection of utility programs for writing and playing music on the 8 bit Atari.

Side one of the double-sided disc contains the music editor, a compiler as well as a drum machine and a sound effects generator.

Side two holds a two-part music tutor, guitar tutor, playalong and a composer program.

Compendium requires Basic and boots-up automatically when the disc is in place and the Atari turned on.

The main screen is divided into two sections — the lower half shows the main menu, complete with eight right-rotated letters.

These are supplied by the joystick when it is not control-

ling the piano-style keyboard.

The software for writing music is reasonably straightforward once you've got the hang of it.

You simply move the joystick left or right along the keyboard and hit the when you get to the right note.

It is then saved, its shape and duration changed by moving the same stick forwards or backwards.

A four trigger mouse action type of mode would probably be more of a kindness than a help in this situation. A keyboard option would have been useful.

A right-handing hand of mine found the joystick controlled input rather slow and thought an option to show notes straight on to a screen with cross hairs might have been better.

Playing is a fun piece of software that simply plays four types of music — Basic, Bodge, country and waltz.

The drum machine allows



you to create several hours of semi-realistic drumming — the best sequence is described in pattern names and sequences.

The compiler program combines up to four pieces of music into one long piece. You can write music in smaller sections, then combine them into one grand masterpiece.

Sound Effects Master provides you with some over-used sound effects such as the Star Raiders hypno-space whistle.

The music tutor shows a series of lessons with ten-to-ten-year style education.

The guitar tutor shows an

the major, minor and seventh positions on the screen and also the correct fingering.

Colleen Music Compendium is a sophisticated music making utility at a reasonable price.

It does have a few design faults, but overall it is an impressive package — you certainly get a lot of code for your money.

Jason Kingsley

Sound	...	10
Graphics	...	8
Playability	...	7
Value for money	...	8
Overall	...	7.5

Golden oldie

Program: *Samples of Asaph's Utterance*
Price: £14.95 (plus)
Developer: US Data Units 2 & 3
Address: 1100 Bedford St
 Birmingham B15 2AR Tel:
 021-355 3333

A CBIF reminder with just pleasure playing Asaph on one of the original Commodore Pets as it shows how long in the tooth the series is — no less, for that matter.

Now these three games — *Samples of Asaph's Utterance*, *Asaph's Utterance* and *Asaph's Utterance* — have been updated, repackaged and issued by US Gold as a trilogy.

Asaph's Utterance is a role-playing adventure in which you wander through labyrinthine of tunnels and chambers battling monsters and gathering treasure.

The games are very similar to each other, differing only in labyrinth layout and contents.

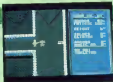
The screen is divided into two windows. In the right-hand window a variety of data is displayed including room number, treasure contained, fatigue level and weight carried.

It also provides the quantity of healing herbs, staves and arrows in your possession, the name of the monster you are fighting, battle results and other challenges.

The left-hand window gives a graphically simple map of the passageways and chambers in the immediate vicinity. You are represented as a small animated figure which from time to time is surrounded by various animated monsters.

There are 20 navigational commands at your disposal. You can move your character various distances, turn 90 degrees to the left or right, and turn about face or rest.

In a fight you can attack, parry, throw and flee a normal



or magical sword.

You can also search for traps, examine a wall for a secret door, open a door, pick-up or drop a treasure, listen for or speak to a monster, apply a staff or drink an elixir and hit your treasure.

Accompanying the package is a quick-reference card and a superbly presented 80-page book which describes every room, monster, trap and treasure in full detail.

It also provides a wealth of background lore and useful

gameplay information

Asaph's Utterance is the best of its kind in its league. Although it now seems simple stuff, being nearly 20 years old, it is still a pretty fair role-playing game and, at the price, a bargain.

Stephen Weather

Sound	4
Graphics	4
Playability	4
Value for money	4
Overall	4

Mouldy oldie

Program: *Clash of Death*
Price: £2.95 (casual)
Developer: Bug Bytes, Liberty
Address: 323 Regent Street,
 London W1R 7JL Tel:
 01-432 0888

CLASH OF DEATH was first released about two years ago by Argus. I wish I could say it was worth re-releasing, but I'm afraid the game's more of a mouldy slice than a golden oldie.

To give you some idea of the package you have to load and run the game with *CLASH OF DEATH* and *RUN FROM DEATH* — now when did you last have to do that with a commercial game?

All the start you find yourself in a dark hall in an old house which is reputed to be haunted.

The front door has slammed behind you and there appears to be no way out. You must

stay alive long enough to find the exit.

Each location is described using both text and an accompanying picture — the graphics can be turned off though.

The cassette tape proudly proclaiming that *Clash of Death* is a spine-chilling adventure with state of the art blood-curdling graphics.

However the truth is that this is a sub-average adventure with sparse verbal descriptions and mediocre graphics.

It has more than its fair share of inconspicuous and disbelievable in a string room the man told me that I could see a grandfather clock — but there was no sign of it in the picture.

Looking into a sink I was told there was some water there. When I tried to DRINK WATER the program didn't

understand me.

Further examples. Examining a door revealed that 'The latch is broken'. My attempt to LIFE LATCH was countered with 'I don't recognise that noun'.

Grasping a wooden chair, standing in it then typing LOOK revealed facts that anyone would expect to see even if they weren't standing on a chair.

But grids of place must go to the library where there were shelves full of books — how surprising. Trying to take or read a book got me nowhere

but when I typed EXAMINE SHELF I was told 'I see something'.

Typing LOOK revealed a book. I was allowed to take it but only that one. Perhaps the rest were glued to the shelves.

Taking a note from the program I switched off *Clash of Death* and went off to write good books.

Rob Chappell

Sound	1
Graphics	4
Playability	2
Value for money	4
Overall	2



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100% 100% 100%

PRINT FOR REVIEW

POKE \$C256,200 means that the horizontal position of Missile 3 has been shifted. If a Missile 3 sprite was displayed it would have moved to the right of the screen. Arinc has now removed the value 200 from register \$C256 and replaced it with the last collision value, which is still 1.

Line 490 looks at the value held in the Player 3 to player splitter register (53360) and stores this value in the variable PLAYCOLL. Line 500 performs a similar operation for the Player 3 to playfield collision register (53368) which is stored in the variable AMPDCOLL.

Lines 520 to 530 display the current value of `FIELDCOLL` and `PLANECOLL` as indicators if a collision has occurred and what type of collision it was.

Run the program and move the bug until it touches the yellow line at the bottom of the screen. The value held in the Player 3 to playfield collision register (GGPSS) is now 3, which means that Player 3 has collided with *Playfield 3*.

Now move the bug along the yellow line until it touches both the line and the tree trunk and the collapse value of the playground column is now 3. The bug is touching Playground 2 (the line) as well as Playground 1 (the tree trunk). The column register adds together the two collision codes 1 and 2 which are the collision code 3. In a similar

Register	Description	Values
032048	Module 0 to Playfield	0=collision with Playfield 0
032049	Module 1 to Playfield	1=collision with Playfield 1
032050	Module 2 to Playfield	2=collision with Playfield 2
032051	Module 3 to Playfield	3=collision with Playfield 3
032052	Player 0 to Playfield	
032053	Player 1 to Playfield	
032054	Player 2 to Playfield	
032055	Player 3 to Playfield	
032056	Module 0 to Player	1=collision with Player 0
032057	Module 1 to Player	2=collision with Player 1
032058	Module 2 to Player	3=collision with Player 2
032059	Module 3 to Player	4=collision with Player 3
032060	Player 0 to Player	
032061	Player 1 to Player	
032062	Player 2 to Player	
032063	Player 3 to Player	
032064	Clear all collision registers when 0 returned by bit.	

Keywords: *College students, self-esteem, self-esteem scales, self-esteem measurement, self-esteem research*

feature, if a player touches both Playfield 2 and Playfield 3 then adding the values from Figure 11, we get 6.

If you move the bug up until it touches both the top of the tree and the tree, a similar situation takes place. Cell number 5 represents the value held in register R3R3 (Player 3 to player1) which is a combination of cell number between Player 2 (a value of 4) and Player 0 (a value of 1).

You could at this point stop the program by means of the Break key and here is

FIRST FREE MOVIES

What value do you think you will gain? Will John Brown II see any flow?

the collision register for Player 2 (the man) is 53262, and a collision between a Player 2 shape and a Player 3 (the foot shape) is 8.

After a collision its value stays in the collision register until the registers are cleared by using the command `POKE $A0700`.

You cannot use test individual registers, as the 540 clears both the player and the playfield collision registers. Because of this if you are using a program that contains several players and missiles, keeping track of collisions can be tricky. You must make sure that the collision registers



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流动资产	1,000,000	流动资产	1,000,000	流动资产	1,000,000
货币资金	100,000	货币资金	100,000	货币资金	100,000
应收账款	200,000	应收账款	200,000	应收账款	200,000
预付账款	50,000	预付账款	50,000	预付账款	50,000
其他应收款	150,000	其他应收款	150,000	其他应收款	150,000
存货	500,000	存货	500,000	存货	500,000
流动资产合计	1,000,000	流动资产合计	1,000,000	流动资产合计	1,000,000
非流动资产	1,000,000	非流动资产	1,000,000	非流动资产	1,000,000
长期股权投资	500,000	长期股权投资	500,000	长期股权投资	500,000
固定资产	400,000	固定资产	400,000	固定资产	400,000
无形资产	100,000	无形资产	100,000	无形资产	100,000
非流动资产合计	1,000,000	非流动资产合计	1,000,000	非流动资产合计	1,000,000
资产总计	2,000,000	资产总计	2,000,000	资产总计	2,000,000
负债和所有者权益	2,000,000	负债和所有者权益	2,000,000	负债和所有者权益	2,000,000
短期借款	100,000	短期借款	100,000	短期借款	100,000
应付账款	200,000	应付账款	200,000	应付账款	200,000
预收账款	50,000	预收账款	50,000	预收账款	50,000
其他应付款	150,000	其他应付款	150,000	其他应付款	150,000
长期借款	500,000	长期借款	500,000	长期借款	500,000
所有者权益	1,000,000	所有者权益	1,000,000	所有者权益	1,000,000
实收资本	500,000	实收资本	500,000	实收资本	500,000
未分配利润	500,000	未分配利润	500,000	未分配利润	500,000
负债和所有者权益合计	2,000,000	负债和所有者权益合计	2,000,000	负债和所有者权益合计	2,000,000

are only shown after all of your tests are complete.

The second thing Program 1 demonstrates is shape priority.

Move the bug and if it is just way over the tree trunk, then press the P key to change the shape priority. Part of the bug will now be obscured by the tree.

Memory location 623 alters the priority and, as can be seen by the text display, now holds the value 3.

Figure 11 is a list of the priority options. As you can see a 1 means players have priority over playfields, which means that players will appear to be in front of playfields. Option 2, which is assigned when you press the P key, gives playfields priority over Player 2 and 3. Because the bug is Player 3, the tree trunk (Playfield 1) appears on top of it.

If you move the bug directly underneath the tree so that when option 2 is chosen the bug is not visible, you will notice that the playfield collision register still detects a collision between Player 3 (the bug) and Playfield 1 (the tree trunk). So even if you cannot see the actual collision, the program can still detect it. When writing programs that include both shape priority and collision-detection you must allow for this phenomenon.

If you study Figure 11 you will notice there are some restrictions to shape priority. You can only choose one set of priorities — 1, 2, 4 or 5 — which may not always conform to what you want to achieve in a program. You cannot, for example, give Player 3 priority over Player 5. If you move the bug to the green

Register	Player
53256	0
53257	1
53258	2
53259	3

Put these registers with 0 for normal size, 1 for double size of 2 for quadruple size

Figure 10: Player size registers

section of the tree, (Player 0) it will always appear underneath it.

Because of these restrictions it is important to choose carefully which shapes you allocate to which players in order to achieve the correct effect.

Another option associated with address 623 is value 32, which is known as overlap. Move the bug underneath the tree then press the O key and you will see a third colour (which appears as areas where the two players overlap). This only works for Player 0 in conjunction with Player 1, and for Player 2 with Player 3. You will not get a third colour when, for example, Player 1 is over Player 3.

You cannot choose which colour you get during the overlap option — try choosing the colour registers of Player 3 and Player 2 in line 130 to see what other third colours appear during the overlap option.

You will observe from the contents of address 623 that if you want more than one option there are added together. Thus if you have a shape priority option 1, together with the overlap option 32, the contents of 623 should be 33 (32 plus 1).

Registers 53256 to 53260 are the size registers (as well as being used

only collision registers) — see Figure 10. There are three sizes to choose from — normal, double and quadruple. If the size registers are not altered the players or machines will default to normal size.

The size option alters the width of each individual pixel. Vertical size can only be altered by plotting more pixels within the player strip, or by using the double resolution option.

In line 330 of Program 1, Player 0 has been set to quadruple size by means of the command POKE 53256,4 and Player 2 changed to double size. Try altering these values to see how this affects the program.

Program 1 also introduces a short machine code routine that clears the player missile data area. In previous programs in this series this has been done from Basic by using a FOR...NEXT loop that pokes zeroes into the Player data area.

This is fine when dealing with just one player, as the time taken to clear 256 bytes is not very long, but if you are using a program that uses more players and missiles there is quite a wait while the program clears the whole data area.

The machine code routine cuts this delay by rapidly putting zeroes into the player missile data area. It is an adaptable routine that can be used to put a specified number of zeroes into a specified memory area.

The data for the routine is contained in lines 630 to 639. The formula for calling the routine is as follows:

An IBMAddress of MC routine, Address of area to be cleared, how many bytes to clear

In line 110 the machine code clear routine is accessed using the above formula.

Program 1 is an example of using double resolution players. The procedure used is similar to that in Program 1, except that the shape data is loaded into a different part of the player missile data area (Player 0 from PMBASE+512, Player 1 from PMBASE+540, Player 2 from PMBASE+768, Player 3 from PMBASE+1024. See player data area memory map in Part 3).

The loading of the shape data into the correct player data area is taken care of by lines 130 and 140. In line

Priority options	Value
Playfield 0-3, Playfield 0-3 background	+1
Player 0-1, Playfield 0-3, Player 2-3 background	+2
Playfield 0-3, Player 0-3 background	+4
Playfield 0-1, Player 0-3, Playfield 2-3, background	+8
Other options	
All registers have same colour *	+16
Overlap of players before third colour	+32

* The colour will be the same as value stored in colour register 777 (Playfield 2).

Figure 11: Address 623 priority selection and overlap

150, location 250 is poked with 46 and not 62 as was the case with Program 1. This removes the single resolution option so that the system defaults to double resolution.

You can "fine tune" the vertical position of any player or missile by shifting register 33376 before each re-plotting sequence. This results in the players and missiles moving up or down in steps equivalent to a single resolution pixel height. The numbers to poke are given in Figure V.

Player 2	128
Player 2	64
Player 1	32
Player 0	16
Missile 3	8
Missile 2	4
Missile 1	2
Missile 0	1

Figure V

To see this at work stop the program when the players are displayed and enter **POKE 33376,128** and watch the fog.

Program 4 also introduces us to the missile. Control of the missile size is not as straightforward as that of the players. There are, like players, three missile sizes to choose from - normal, double and quadruple - but the only missile size register is

Missile Size	Normal	Double	Quadruple
0	0	1	2
1	0	4	3
2	0	16	12
3	0	64	168

Add contents of missile size and poke the value into 33260 (missile size register)

Figure W: Missile size 33260

located at address 33260.

To work out what number to poke to the register consult Figure W and add up the options you require. For example, if you want a normal size Missile 0, double size Missile 1 and quadruple Missile 3 you would use **POKE 33260,168** ($0+4+162=168$).

Line 250 of Program 4 sets all missiles to quadruple size with the command **POKE 33260,255**. This means that the ships that make up the missile shapes will be considerably larger than we have previously encountered when using normal size players.

Lines 210 to 230 set the horizontal position of the missiles - remember missile horizontal registers are at 33262 to 33265.

Plotting the missiles can be complex. The way the data is organized within the missile data area is shown in the bit-mapped method first encountered in Part 2 of the series. Each missile shape is only two pixels wide and each byte controls all four missiles. The program shows how the works. When prompted you can enter any value between 0 and 255. This value is then given the variable name **PG** (line 320) which is then **POKEd** into the missile data area to switch on or off the appropriate missile parts.

Line 3330 performs the function by **POKEing PG** into the missile data area (**PG*BASE+364+40**).

The missile data area for double

```

30 REM ***** PROGRAM 4 *****
40 REM ***** MISSILE SHIP *****
50 REM ***** MISSILE SHIP *****
60 REM ***** MISSILE SHIP *****
70 REM ***** MISSILE SHIP *****
80 GRAPHICS 0:POKE 33376,0
90 SCREEN 0,0,0
10 SCREEN33376+5
11 POKE 33376,POKE
12 POKE 33376,POKE
13 POKE 33376,POKE
14 POKE 33376,POKE
15 POKE 33376,POKE
16 POKE 33376,POKE
17 POKE 33376,POKE
18 POKE 33376,POKE
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resolution missile starts at PMSA01 plus 384 and for single resolution missiles at PMSA00 plus 768. 40 is added to this value to plot the pixels per row down the screen.

In Program 5 we are only using missiles one pixel high. If you want taller ones you would need to poke in more data. Of course, because the missile stripes are only two pixels wide, there is a limit to how complex the stripes plotted can be.

If you input a value of 1, then the right half of Missile 0 is plotted. A 2 plots the left hand side, and if you add these two together by inputting a value of 3 the whole width lights up.

Line 130 has calculated on all the missile pixels along the width of the missile stripes by POKing a value of 255 (128+64+32+16+8+4+2+1) which is the total status of the missile when you first run the program.

You can see that by inputting various values, any combination of

missiles can be achieved.

Missile movement is similar to that of players - allowing the horizontal registers moves them from left to right, and re-plotting the data achieves vertical movement.

Because of the way missiles are plotted, it takes careful planning if you are writing a program that has, for example, all four missiles moving to different positions at the same time.

Colour detection for missiles is exactly the same as for players - just use the appropriate reflexion registers from Figure 6.

Usually missiles take on the same colour as that of the player with the corresponding number. By adding 18 to address 823 (see Figure 11), all missiles will take on the same colour as Playfield 3 (but by colour register 71 1).

Having all missiles the same colour is useful if you want to create a fifth player. Providing you do not want to use the missiles individually you can

set the horizontal missile registers in such a way that the missile stripes are adjacent to each other, forming one stripe eight pixels wide which can be made to act like a fifth player. To see this at work add line 235.

**235 POKE 83262,134:
POKE 83263,142:
POKE 83264,150:
POKE 83265,158**

These horizontal registers are not eight pixels apart to allow for the fact that the program is using quadruple size missiles. If you were using different size missiles the above values would have to be altered to take account of this.

The shape information for this fifth player can then be loaded into the missile data area in exactly the same manner as a normal player. Vertical movement is the same, but horizontal movement requires that you alter all the missile horizontal registers each time you want to move the block.

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Talk to the USA — the Atari way

WHILE many popular home micro-owners find their thirst for knowledge on the subject of Spectrums, Commodores and the like satisfied by services such as Microsoft 800, what of Atari owners with such cravings?

The answer lies, not in England, but across the North Atlantic in America, where online systems proliferate.

Let's take a look at what's available on the giant US database CompuServe, located in Columbus,

Ohio. In the US, CompuServe — whose large DEC-based set of computers holds literally gazillions of data covering all aspects of computers, business and life in general — is the undisputed leader in providing on-line entertainment.

The diverse topics covered by this almost limitless database include human sexuality, writing and politics to mention but a few. Included in this diversity is the Atari area — a veritable Aladdin's cave of information for Atari owners. Both 8-bit and 16-bit owners are more than welcome here.

CompuServe's offerings fall into six main categories: Home Services, Business and Financial, Personal Computing Services for Professionals, User Information and the Index. Selecting any one of these choices takes you to further menus each with as many as 25 further choices. Thus, from the deceptively few choices from the top menu, CompuServe takes you to literally a whole macrocosm of options.

Where CompuServe really scored over its main rival in the early 1980s — The Source — was in its introduction of a real-time chat facility.

Called the CB Simulator, interactive chat took off right from the word go, and although expensive in terms of computer processing power, CompuServe's free decision to offer a service everyone else thought would fail miserably has turned out to be their main source of online revenue — a fact much envied by The Source.

I'm sure we've all heard of the old joke about the daughter phoning her boyfriend in America, and poor old dad being landed with an enormous bill. This problem has always dogged UK computer users who wanted to access the large American databases.

However, while bulletin boards in the US must be accessed via direct

dial, there exists in several countries — including the US and the UK — a network, designed solely for the purpose of allowing computers to communicate with each other via a peripheral known as a modem.

If computer users are connected permanently to the network via special diallines, smaller and occasional users can connect into the network via dial up diallines, or packet switching exchanges.

To access a Packet Switching System (or PSS), you proceed exactly



**By
STEVE
GOLD**

If you would when signing on to a bulletin board — you dial the number (normally local), connect your modem and communicate with the service concerned. In the case of packet switching, you must first link with the packet switching node — log-on in communications parlance — and then set up a datalink to the distant host computer.

I know this sounds complicated, but rest assured it isn't. It's easy and, above all else, it's CHEAP. Datateleils because of their nature of packetizing data down telephone and destinals can share a single line, provided the data is clearly packetized for easy decoding at the distant host computer.

By skilful use of hi-tech switching, several datateleils can be stacked onto a single call, allowing the callers to share the costs of making a datateleil.

In the case of North American datateleils, the savings can be quite large — calling the US works out at 7.5 pence per minute, as opposed to the 80 pence or so that a typical voice-call costs.

When the data costs are added to the time costs, then the initial cost of making a call to a US service such as CompuServe can work out to a quite reasonable 13 to 16 pence a minute.

The Atari area on CompuServe are huge. Split into four parts, the Atari sections of CDS fill a complete DEC 10 miniframe which forms just part of the CDS network of DEC computers, all of which are located in Columbus Ohio. The four main sections on CDS are Atari Online, the Atari 16 bit forum, the Atari 8 bit forum and the Atari developers forum.

Atari Online, as the name implies, is an area run by Atari, the US magazine for Atari owners. Contents include features from future issues, as well as extracts from previous issues.

A sampler of what the service is like can be seen from the excerpts on the left.

The Atari 8 bit 16 bit and developers forums are for the differing requirements of the XL, XE and ST owners and are in effect a microcosmic bulletin board system in their own right, controlled separately from CompuServe by SIG-OPS.

Special Interest Group Operators, a corruption of the term spops, which stands for system operators.

Like BBSs, the forums allow callers to read, leave and reply to messages left on the board, as well as load and download public domain programs. Several terminal programs



Comms

American \$cene

EDWARD SHARK reports

HAVING fully recovered from a hectic few days (see I at the Consumer Electronics Show in Chicago) I'm able to report on a couple of the more interesting items on show for the 8 bit Atari range.

First off was the much rumoured XEP-80: a box about the size of the 850 interface which gives a crisp 80 column display on a black and white monitor.

Currently most software cannot take advantage of this new capability but many software companies are enhancing their programs to use the 80 column mode. The XEP-80 should be available by the end of the year for around £90. It is also likely to become part of the word processor package that Sam Tanieli announced at the Ann User Show in London in March.

Hardware company ICD announced a new I/O and memory board for the 8 bit range. The ICD Multi I/O board comes with parallel serial and hard disc ports as standard and is available with two sizes of memory. The 256K version will cost £199 while the first version will be £249.

Also at the show Infocom announced two additions to its ever growing range. *Leather Stockings of Phobos* is a new Infocom Plus adventure that has you kidnapped by evil women and taken off to Phobos, one of the moons of Mars.

USP is another game from the keyboard of Steve Meretzky of

Thousands of their range of interactive fiction adventures.

Both adventures are set to be available simultaneously in the US and the UK in early October.

American the Californian entertainment software company has reached an agreement to merge with Infocom. Infocom chairman and chief executive officer James Levy said Activision will exchange two million Activision shares currently valued at £7.5 million for all outstanding shares in Infocom.

Activision will take over the distribution of all Infocom products

Sidekick package for the IBM PC and clones. It includes a full ASCII chart in a scrolling window, a calculator with decimal hex binary, and octal functions, a note pad, a phone dialler, a clock (which appears in the upper right corner of any IBM screen) and much more.

Comman is probably most noted to a first ST since it uses up a fair bit of RAM but it also draws rave reviews from several 320 owners in my area.

A recent arrival on the US scene will probably give Comman a run for its money. *Maid Manager* from Blue Moon Software (distributed by Shenar International) is a very complete accessory. Its calculator works in algebraic and Reverse Polish notation (remember that!) and also includes financial functions. It also contains a weekly planner with project time reporting, electronic file database, alarm clock, calendar and an electronic typewriter feature.

One of the latest programs to hit the stores in the States is *Thunder* from Bethesda. Included. This is a



thereby cutting the price on all Infocom products in the UK. For its part, Infocom will maintain separate product development and marketing operations in Cambridge, near Boston.

Activision has also recently acquired Gametech, creator of Championship Golf and GSA Championship Basketball, two ST games due for an autumn release, and Creative Software, a productivity software company.

Activision was founded in 1979 when five disaffected employees left Atari to form their own VCS games cartridge company.

In the Atari ST software world we're starting to see some very powerful desk accessories. These programs stay resident in memory and provide features that can be used at any time by programs which take advantage of the GEM environment.

From Michigan we have Comman. This program offers features comparable with the much-acclaimed



restless spelling checker for GEM applications. While you're typing it checks your spelling and buzzes if you make an error. Nice!

By clicking on the desk accessory menu it will tell you what word was wrong and offers you a choice of synonyms. *Thunder* comes with a 50,000 word dictionary for starters, which is expandable via two further dictionaries: one with supplemental words and the other with replacement words. You give it a word and an automatic replacement for words you commonly misspell. Abbreviations are automatically expanded for you.



Pensoft and Hitch Hike: a Guide to the Galaxy Series.

The other new offering is called *Moostart*. This beginner level offering is slightly more grown up than Infocom's other beginner games and the firm hopes it will attract further

IT'S accade time again, and this month we have a real challenge for you. Your task is deceptively simple - you must build a number of fences with the materials provided.

Unfortunately most of your tools have been exposed to a radiation leak from a nearby nuclear power plant and are now now roaring the countryside wreaking havoc among the local fence-building population. Should one touch you you will die.

Well, a job's a job, and you must find a way to build the fences. You will use three items at the top of the screen - a spade, some fence posts and some fence rails. Using your joystick button, you may pick up these posts or fence rails at a time.

To plant a post just position yourself under a hole and press the button. Similarly you may erect a section of fencing by

FENCE BUILDER



By A. & R. LINES

collecting railing pieces and standing next to a fence post as you press the button. If you bump into anything else you will simply bounce off again.

You may fill in the holes by collecting the spade, but this won't help your high score an awful lot.

Once all the fences have been erected you can move on to the next level. If you exceed your time limit, or one of the roaming tools catches you, you lose a life.

Points are only awarded for erecting a piece of fence, although there is a bonus for completion of each level.

When typing the program in, don't forget to **POKE** \$2,0 first. This will enable you to enter some of the longer lines. You may also use abbreviations - such as GR. for GRAPHICS, and \$L. for SETCOLOR - to speed up your typing.

If you have any problems use the checksum table and the Get-it-Right! program from the last issue. This will ensure that you have typed it in correctly.

NUMERIC VARIABLES

A, B, I	Control process variables used for FOR NEXT routines. PEEKs and POKEs act on variables used in on.
FLAG	Flag used to decide whether a routine is overriden. Normally 0 flag is set.
SCORE	Holds value of score awarded.
C	Indicates if an object is being carried, and if so what.
CHACT	Address of memory reserved for new character set for the USA routine.
COUNT	Number of pieces held.
DIPS	Holds skill level chosen.
DL	Used for display last PEEKs and POKEs.
DK	Used to move player 1 left or right, and to choose left or right-facing player.
DY	Used to move player 1 up or down.
FER	Holds larger number of fence pieces to be put up in any particular round.
DM	Display mode (player game screen).
IT	Holds value of character above player 1 when function is pressed.
I	Used to select five different forms of left-facing player 1.
LEV	Holds the starting and finishing points of each row of fence.
LEVEL	Holds number of screen setting to be displayed.
LIFE	Holds number of lives left.
LIMIT	Holds time limit for display/routine limit.
MM	Holds page number where character set data is stored.
MMT	Holds page if memory location for music routine.
M1, M2, M3, M4, M5, M6	Music frequencies.
OT	Used by timer routine.
PL	Holds value of character above and to left of player 1 when fence pressed.
PMOVE	Holds address of player moving routine.
PS	Similar to PL, but left or right not left.
R	Similar to L, but for right-facing players.
SCORE	Holds current score.
SET	Used in character routines.
TIME	Holds value of time.
TRIP	Trigger pressed flag.
UP	Holds number of fence line screen.
V0, V1, V2, V3, V4, V5, V6, V7, V8, V9, V10, V11, V12, V13, V14, V15, V16, V17, V18, V19, V20, V21, V22, V23, V24, V25, V26, V27, V28, V29, V30, V31, V32, V33, V34, V35, V36, V37, V38, V39, V40, V41, V42, V43, V44, V45, V46, V47, V48, V49, V50, V51, V52, V53, V54, V55, V56, V57, V58, V59, V60, V61, V62, V63, V64, V65, V66, V67, V68, V69, V70, V71, V72, V73, V74, V75, V76, V77, V78, V79, V80, V81, V82, V83, V84, V85, V86, V87, V88, V89, V90, V91, V92, V93, V94, V95, V96, V97, V98, V99	Comments numbers field attributes.
X	X-coordinate of player 1.
X1	Shared by LOCATE statements.
Y	Y-coordinate of player 1.
Y1	Used by LOCATE statements.

STRING VARIABLES

AB	String input and temporary storage.
ABT	Holds machine code routines.
CB	Used to clear screen.
CH, CH1, CH2, CH3, CH4, CH5, CH6, CH7, CH8, CH9, CH10, CH11, CH12, CH13, CH14, CH15, CH16, CH17, CH18, CH19, CH20, CH21, CH22, CH23, CH24, CH25, CH26, CH27, CH28, CH29, CH30, CH31, CH32, CH33, CH34, CH35, CH36, CH37, CH38, CH39, CH40, CH41, CH42, CH43, CH44, CH45, CH46, CH47, CH48, CH49, CH50, CH51, CH52, CH53, CH54, CH55, CH56, CH57, CH58, CH59, CH60, CH61, CH62, CH63, CH64, CH65, CH66, CH67, CH68, CH69, CH70, CH71, CH72, CH73, CH74, CH75, CH76, CH77, CH78, CH79, CH80, CH81, CH82, CH83, CH84, CH85, CH86, CH87, CH88, CH89, CH90, CH91, CH92, CH93, CH94, CH95, CH96, CH97, CH98, CH99	Holds screen data for printed.
DL, DL1, DL2, DL3, DL4, DL5, DL6, DL7, DL8, DL9, DL10, DL11, DL12, DL13, DL14, DL15, DL16, DL17, DL18, DL19, DL20, DL21, DL22, DL23, DL24, DL25, DL26, DL27, DL28, DL29, DL30, DL31, DL32, DL33, DL34, DL35, DL36, DL37, DL38, DL39, DL40, DL41, DL42, DL43, DL44, DL45, DL46, DL47, DL48, DL49, DL50, DL51, DL52, DL53, DL54, DL55, DL56, DL57, DL58, DL59, DL60, DL61, DL62, DL63, DL64, DL65, DL66, DL67, DL68, DL69, DL70, DL71, DL72, DL73, DL74, DL75, DL76, DL77, DL78, DL79, DL80, DL81, DL82, DL83, DL84, DL85, DL86, DL87, DL88, DL89, DL90, DL91, DL92, DL93, DL94, DL95, DL96, DL97, DL98, DL99	Holds left-facing players.
HL, HL1, HL2, HL3, HL4, HL5, HL6, HL7, HL8, HL9, HL10, HL11, HL12, HL13, HL14, HL15, HL16, HL17, HL18, HL19, HL20, HL21, HL22, HL23, HL24, HL25, HL26, HL27, HL28, HL29, HL30, HL31, HL32, HL33, HL34, HL35, HL36, HL37, HL38, HL39, HL40, HL41, HL42, HL43, HL44, HL45, HL46, HL47, HL48, HL49, HL50, HL51, HL52, HL53, HL54, HL55, HL56, HL57, HL58, HL59, HL60, HL61, HL62, HL63, HL64, HL65, HL66, HL67, HL68, HL69, HL70, HL71, HL72, HL73, HL74, HL75, HL76, HL77, HL78, HL79, HL80, HL81, HL82, HL83, HL84, HL85, HL86, HL87, HL88, HL89, HL90, HL91, HL92, HL93, HL94, HL95, HL96, HL97, HL98, HL99	Holds high scores screen.
HL1, HL2, HL3, HL4, HL5, HL6, HL7, HL8, HL9, HL10, HL11, HL12, HL13, HL14, HL15, HL16, HL17, HL18, HL19, HL20, HL21, HL22, HL23, HL24, HL25, HL26, HL27, HL28, HL29, HL30, HL31, HL32, HL33, HL34, HL35, HL36, HL37, HL38, HL39, HL40, HL41, HL42, HL43, HL44, HL45, HL46, HL47, HL48, HL49, HL50, HL51, HL52, HL53, HL54, HL55, HL56, HL57, HL58, HL59, HL60, HL61, HL62, HL63, HL64, HL65, HL66, HL67, HL68, HL69, HL70, HL71, HL72, HL73, HL74, HL75, HL76, HL77, HL78, HL79, HL80, HL81, HL82, HL83, HL84, HL85, HL86, HL87, HL88, HL89, HL90, HL91, HL92, HL93, HL94, HL95, HL96, HL97, HL98, HL99	Temporary store for high score routine used for naming player.
PMOVE	Machine routine for moving players 2 and 3.
RL, RL1, RL2, RL3, RL4, RL5, RL6, RL7, RL8, RL9, RL10, RL11, RL12, RL13, RL14, RL15, RL16, RL17, RL18, RL19, RL20, RL21, RL22, RL23, RL24, RL25, RL26, RL27, RL28, RL29, RL30, RL31, RL32, RL33, RL34, RL35, RL36, RL37, RL38, RL39, RL40, RL41, RL42, RL43, RL44, RL45, RL46, RL47, RL48, RL49, RL50, RL51, RL52, RL53, RL54, RL55, RL56, RL57, RL58, RL59, RL60, RL61, RL62, RL63, RL64, RL65, RL66, RL67, RL68, RL69, RL70, RL71, RL72, RL73, RL74, RL75, RL76, RL77, RL78, RL79, RL80, RL81, RL82, RL83, RL84, RL85, RL86, RL87, RL88, RL89, RL90, RL91, RL92, RL93, RL94, RL95, RL96, RL97, RL98, RL99	Holds right-facing players.
RL1, RL2, RL3, RL4, RL5, RL6, RL7, RL8, RL9, RL10, RL11, RL12, RL13, RL14, RL15, RL16, RL17, RL18, RL19, RL20, RL21, RL22, RL23, RL24, RL25, RL26, RL27, RL28, RL29, RL30, RL31, RL32, RL33, RL34, RL35, RL36, RL37, RL38, RL39, RL40, RL41, RL42, RL43, RL44, RL45, RL46, RL47, RL48, RL49, RL50, RL51, RL52, RL53, RL54, RL55, RL56, RL57, RL58, RL59, RL60, RL61, RL62, RL63, RL64, RL65, RL66, RL67, RL68, RL69, RL70, RL71, RL72, RL73, RL74, RL75, RL76, RL77, RL78, RL79, RL80, RL81, RL82, RL83, RL84, RL85, RL86, RL87, RL88, RL89, RL90, RL91, RL92, RL93, RL94, RL95, RL96, RL97, RL98, RL99	Holds players 2 and 3.

LD MOV P00001, P000000000
SEPTEMBER 1988

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[illegible][illegible][illegible]



Trinity, a winner from the shadow of the Bomb

By Brillig

All a result of messing around with a little-known version of a Brandenburg spell that I found but-stated and barely legible in my 1328 edition of *The Wizard's Digest Book of Spells*, I am now the surprised and delighted owner of a 525-STM.

I couldn't similarly manage to conjure up in my wizardon Infocom's new ST adventure *Trinity* to go with my new machine (such spells are useless against the likes of the Fantasy Mage Company). However, Software Express in Birmingham must be the personal friend of *Elkies* because they immediately arranged a review copy for me.

Trinity will be reviewed in more

depth when I've had a chance to get deeper into it, but I thought you might welcome a small foretaste.

Like *Mind Forever Flowing*, this is an interactive Fiction Plus game and so needs 128k of memory - it uses medium resolution mode (60 columns). Once loaded the program rarely needs to access the disc so response time is very fast indeed.

The adventure, written by Brian Moriarty of Washington fame, breaks new ground for Infocom, being the first to concentrate on a serious theme and the first to use actual prices and events. Although I certainly wouldn't like to give you the



Tips for the Enchanter trilogy

Starting with *Infocom* for this month, the following is a pot pourri of tips and fun items to try out on the marvellous *Enchanter* trilogy. It progresses in ascending order of difficulty level and consists of *Enchanter* (standard), *Enchanter: Advanced* and the newly-released *Spellsheets* (expert).

The tips have been coded in a very simple fashion so that you won't accidentally read something that might otherwise spoil your enjoyment. Each tip is written backwards, with all spaces and most of the punctuation removed, and presented in blocks of four letters. To decipher, simply read from the right to the left of the tip.

ENCHANTER

1. How do you survive the wizard?

- LOP SOOM JOEN TEOO TIOO P
- PAUC LAAH HTOE HAT TPOE DITH DUE WTON HEE SW
- 2. Is it possible to take the magical dagger?
- JOP SOAS DITE WEE SOLO MOO DSH
- 3. I can get to the control room in the engine room using the EXOX spell but how do I get back safely?
- MOON EMO AHEE TOTE LTAU THT DAIN
- WMOE JOE
- WMOE MOAL SOAO SOEA TEOO GOMM BALL ET

For fun try killing it or befriending the guards in the cell following to the guards conversations while in the cell.

CONCERN

- 1. How do you win the treasure in game in the Amusement Park?
- SOET OPEL SOOP JHTO JENG OT

- TPOE EWH JOE
- NEN WMOE SOAL GALT DITH SWOL
- LAAH EWH KAP
- SOET OPEL SOOP EWHK NAO
- SOHWAE WTH LAAH EWHW DAP

For fun try fitting on the pirate's penis leaving the scene with the ball, asking someone about himself!

SPELLSHEETS

- 1. How do you get the beam's cube?
- TOME HTOE ASAC
- EHOE EWH KAT
- 2. How do you tell one featureless white cube from another?
- SOE WTH MOE SOEW TIOO SOLO WMOE WHT HEE OTAP
- WTH MOE WHT TIOO WTH MOE WHT MOE WTH MOE

For fun try! Smelling the cube and the snake, snake, sleeping in the cube's cave, following the rabbit from the meadow.

1000

APPLYING STR\$ TO A VARIABLE

CAN you tell me what certain operational aspects of the Atari 8000S?

Finally, it is possible to apply the STR\$ function to a variable? For example:

Str=1000-33-STR\$ (X)

Yours is like an information window? by which the transaction?

Basically, how are the USB limited arguments following the starting address of the machine code routine being called related to the routine used?

For example, the 1170 of the Player Missile Graphics program is the June 1986 issue of Atari User.

Finally, how do you implement a floating cursor or character on screen?

Finally, can you get a more detailed directory map to establish exactly which addresses are portable and the system-spanning in which they are related? — **G.A.B. Brady, Saragat**

■ Yes, X80-STR\$ (X) will indeed return a string containing the number you requested. The USB Superdisk arguments are simply a way of passing information from the Basic program into the machine code routine.

They are each pushed onto the 8000 stack in two byte format — low first, high second — so that you pull the low byte off the stack first.

In addition, the routine directly pushes the total number of arguments on to the stack.

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In addition, the routine directly pushes the total number of arguments on to the stack.

There are each pushed onto the 8000 stack in two byte format — low first, high second — so that you pull the low byte off the stack first.

In addition, the routine directly pushes the total number of arguments on to the stack.

so even if you do not use any parameters, you must still remember to PLS the count — zero — off the stack before doing an RTS back to Basic.

Regarding your third query we featured a small routine to give a floating cursor in our very first issue, but we may well have an even better one in the Plus issue set as soon.

Finally a very good memory news called Mapping the Atari is available from Computer Books, which should tell you everything you might want to know and more.

You can get a firm head of the large mail-order firms if you have any problems locating and locally.

800 XL light pen

I WOULD like to know where you could buy a light pen for the Atari 8000S, and how much it would cost — **Adam Unken, Nannigat, North**

■ You can get a light pen for your 800, Atari from Superdisk of Revision Books for £18.50. For that you can the light pen plus various programs to use

with it. Superdisk also runs a bulletin board on 0288 883636 for those of you interested in modern 8 runs at 300/300 at present, and should have the option of 1200/1200 shortly.

Games in Iceland

HOW many game owners in England complaining about software prices? Games costing £10 in the UK cost about £18.50 in Iceland.

If that were not bad enough there are just two retailers in Reykjavik who import Atari games, and they do not stock most of the ones available in the UK.

Fortunately, if you want the mail order service offered by some UK computer shops.

Superdisk Software has been a great help to me, and I can now buy mainstream budget games (Superdisk 3) and many more.

Finally, will UK Atari owners please contact me to swap programming can codes on — **A.T. Guzman, Haffman 3, 104 Reykjavik, Iceland** ■ Down Atari/Intertravel the

world? It seems that we have it made with our cheap £9.95 games.

Perhaps other overseas readers would like to let us know how they fare for software and hardware availability and prices in their parts of the world? We look forward to hearing from you.

Out of fuel in Space Maze

I HAVE just typed out your Space Maze and on the first board there is a tower, but what is it for?

On board 3 there is what I think is a fuel station, but I don't see how else to get there.

On board 3 I got through the rocks and landed on what I thought was fuel but was told.

Could you please tell me how to get fuel? — **Carl Disher, Preston, Lancs**

■ The refuel oil you need to do is found inside the fuel dump by giving quick bursts on the rocket until you are stationary. The fuel will then load automatically.

Gathering in the £££s

I HAVE intended to send your recent letters and replies after the passed age going downriver and the 1027 printer. However, there is a much easier way to produce this.

All you need to do is to turn on the International Character Set in the top of the character display.

[CTRL-@][CTRL-@][@] on a separate line underneath the print formatting block. From that point on you

typed signs can be entered up by

[CTRL-@]

The trick is not to use the 1027 option when attempting to enter the pointer. On the other version select option 1 — the 1027 printer. On the other version select option 2 — the 1027 printer.

The only slight drawback is that understanding more has to be achieved by

[CTRL-@][CTRL-@][@]

It can be stopped by the

Using the Return key or by **[CTRL-@][CTRL-@][@]**

Other international characters can similarly be produced by substituting the relevant number from the 1027 manual.

This letter was printed using this method to prove the point — **Phil Cox, Harrogate, London**

■ On that point I think we'd better discuss the great Atari User 1027 pound sign debate well and truly closed.

Locked-up tape

I HAVE the same problem with the Whirlwind Maze as Colin from in June's Mailbag.

It kept locking-up on me and I had to reload. I eventually found out it was a bug in the initial tape.

I wonder whether you are familiar with the robot game Chessers I have found the answer and the bug was

action off the board and shrivel all the water.

I have even tried to move every object at night, but I still cannot open the door. I just keep going and it will crack it's door.

Can you give me a clue on how to open it?

Also it drops an telling me to find a steady object. There are two or three lying about but they all lie to me — James Kelly, Bexley, Yorkshire.

■ Can anyone help out with James' problems? It so good to see a line and see that everyone knows more time.

If anyone else has any questions on other games or items and tips that you think other readers may find interesting, why not tell us know and we'll run a page of them in a future issue.

Maths programs

I AM VERY strongly drawn to Alex Dood's review of Software Factory's GSE and GCE G-level maths series.

I would like to say that as a school teacher who has just seen GSE maths I found that the series of programs helped a great deal with my revision. I do not agree with the remark that you have to be well above G-level standard to understand the questions. I am not anywhere near that

standard yet I could understand the questions and the explanations on the Help pages, and did not feel deterred by them.

I agree that there are still a lot of graphics, but I feel this doesn't matter as it is an educational series and not a game.

We also mention that there is other existing software available to teach. Well, we'd not find any of this wonderful Atari.

I hope that the review will not put people off choosing an interest in the series as it is well worth the money. — R. Shawcross, Kewley, Buxton.

I RECENTLY read the review of the GSE and GCE maths programs in your March 1988 issue.

I used these programs while doing a two year G-level maths course, and after reading the review felt I had to comment on several things mentioned by your reviewer.

On the whole I found that the explanations given in the Help pages were plain, and I did not find the questions particularly difficult.

Regarding graphics, although younger children may find them interesting the older just like reports does not.

Your reviewer said that the course is not good for those who want to teach themselves, but surely it is not

designed for self-teaching, only for use in conjunction with normal classroom lessons.

And what is all this other exciting maths software? I haven't been able to find any suitable for the Atari. — M. J. Miller, Boreham, London.

Vanishing ghosts

COULD you help me with the problem I am having with Move Mouse from your September issue?

On the main screen you can hear the ghosts moving after Harriet, but you can't see them at all.

When you move Harriet about the screen goes up, but then you can see a ghost.

When I checked through the typing I found nothing wrong, and no errors are shown when I run the program. — Scott Downy, Kent.

■ Check your typing again with the check-sum listing for the game in the March issue.

Television systems

I RECENTLY got an 80000, in England and will be returning to the US in January.

The transformer is rated only 330V and I was wondering if I could buy a TVOY transformer when I return?

I assume that the computer is compatible with the Atari systems in the US, along with the software I've bought here. Is this correct?

If so, is there any place in the US where I could get the necessary video hardware to use the system and be back in the US? — Jerry Harvey, Newbury, Bucks.

■ The answer to all of the questions you ask is yes, but you missed out one important one.

You can indeed run an Atari computer software on UK or US machines with no problems and you will have no trouble getting a 110V power supply when you get back to

the States.

Unfortunately the TV system used in America is not the same as that used in England. We use PAL, and America uses a totally different system called NTSC.

PAL gives a much clearer picture, with more stable colours, which is why we switched to it about 15 years ago.

The two systems are incompatible, and you will not be able to get your PAL system Atari to display a picture on an NTSC television.

This means that you will need to either take a PAL TV set over with you, or perhaps better still, sell your old machine before you leave and get a new one which will still run all of your existing software over in the States.

Contact the Atari Hotline for further information.

In the pipeline

I HAVE my heart set on buying an Atari. Unfortunately the ST is out of my price range as the £100 machine are the ones I am interested in.

Will any new machine be appearing in the near future because obviously I would like the latest up-to-date one?

If not, could you tell me if the T2000 is compatible with 80000 and 80000 software and do you think it's a good buy? — Mike Hallatt, Southville, Bristol.

■ We are really blown that Atari have up their corporate sleeves, as it is so difficult to say when it but sometimes they will dream up next.

A lot of interested guests are going around regarding a possible 286, 386 machine but that certainly won't be available this year.

Anyway the T2000 is fully compatible with all 80000 and 80000 software, and is indeed a very good buy.

If you don't feel the extra £40 will be of much use to you, why not look around for one of the £125 Osprey/Campa packs of an 80000, with a 1050 disc drive?

Sound on tape

I HAVE recently read that the T010 program demonstrates can be used to tape programs and sound simultaneously.

If this is so can you tell me where I could buy a video phone and how much it would cost? — Ian Riddle, Tyne and Wear.

■ The T010 — and indeed all of the Atari program recorders — can indeed tape music while loading games, as it uses a stereo tape head.

However there is one snag: way to record is stereo using the T010. The only way to do what you are asking would be

to connect the output from the Atari on to the right channel of a stereo tape deck, and your microphone on to the left channel.

If it is on the 10 pin I/O connector is the audio data-out and pins 4 and 5 are ground.

Don't forget to control the gain facility yourself though as the computer will have no control over when to stop and start the drive.

Incidentally you can only record this way real play back. To play back you must use the T010.

Reading data

I *didn't* had an *ASCII*, for about a year now and despite the appealing features of information stored by *Atari* I am not enthusiastic to write my own programs.

However I am already going back to solve a problem I cannot solve.

I am putting together a filing program using Read data statements and it will not print more than one string only.

The same can be repeated on every line, put the numeric data in correct and in sequence for every line. For example,

```
10 READ A,B,C
20 FOR I=1 TO 40
30 POSITION 3,4:Y=0
40 POSITION 5,4:Y=1
50 POSITION 13,4:Y=2
60 NEXT I
```

results in only one *ASCII* statement, such as a disk, being repeated on every line.

The rest of the program, including the maintenance, works fine. Please help, before the family does not certified - **R.B. Mikhaem, Ballah, West Midlands**

R In the program as you described it the reason you only get one string printed is that you have only READ one string.

If you put the READ AS B C line inside the FOR NEXT loop you'll get 10 different values.

As it is the loop doesn't have any way to store the value of any of the three variables so it prints out the same results 10 times.

Disc drive commended

I *WISH* to compliment the excellent new Flop drive from Comarc for the ST.

Actually I object to the description of any of these drives being Flop, as their useful capacity is only 720K - which is depression in itself -

ATARI USER Mailbag

WE welcome letters from readers - about your experiences using the Atari home about tips you would like to pass on to other users and about what you would like to see in future issues.

The address to write to is:

Mailbag Editor
Atari User
Comarc House
88 Charter Road
Moss Green
Bromsgrove B61 8NY

an only attempt to insult the man expert comment?

Having got one of the Comarc drives a month ago I can report that it operates as fast as the standard Atari drive.

It has all the same shared features, but is very much quieter - almost silent! fast - and costs £88 less as well - I bought mine from a dealer for £104.

Another advantage is that it also has a built in power supply, and is mounted in a very neat grey package which suits the ST very well and measures only 2 x 4 x 3in.

I was slightly sceptical at buying a device for which I had read no reviews, but am definitely recommending this one to you - **C.B. Frank, Southampton**

Miserable manuals

As an 800XL owner of some three months I am sure I am not alone in despising the abysmal manuals supplied with an *Atari* machine.

Atari User religiously buying Atari User each month I have found it difficult to get useful manuals.

I have finally managed to obtain a copy of Mapping the Atari but still being very much a beginner find it rather heavy going.

I would think that with over

100,000 STs sold over the 1985/86 time period there would be a great demand for an in-depth monthly program mag, later, starting at the bottom and working up - **Rick Robinson, Stirling, Dumfriesshire**

Circular solution

I OWN an 800XL and am doing a program for my 12 Levels which involves circles.

Could you tell me if it is possible to draw circles on the 800XL? - **G.P. Lees, South, England**

R There is no function in Atari Basic for drawing circles but you can write a program to draw them yourself quite easily.

The following subroutine will draw one for you.

```
1000 DIM X(10),Y(10)
1010 X(1)=0:Y(1)=0:GOTO 1030
1020 X(2)=1:Y(2)=1:GOTO 1030
1030 END
```

To use it simply set X and Y to the centre coordinates of your circle. XN and YN to the radius then CIRCLE X(0) Y(0).

You may set XN and YN to different values if you want an ellipse rather than a circle.

If you increase the STEP value 5 in line 1010 you can create polygons instead of

circles.

Divide STEP by the number of sides you require to get the STEP value. For example if you want five sides use a value of 72.

WP on the 800 XL

SINCE its launch I have noted several queries in Mailbag concerning word processing on the 800XL machine.

I bought the 800XL 1980 six drive and 1027 printer three drives over a year ago in a package which included *Atari*Soft.

Earlier this year I decided to upgrade and, while visiting relatives in the US, managed to pick up a copy of *PageClip* for the 800XL/1027 at an exceptionally low price of \$44 - why is it \$55 here?

When calculating value it seems to be everything including all the usual features plus double column printing (tables, double circles, tables and hanging indents).

It comes with approximately 20 printers drivers which cover most popular models, and it also has a program which allows you to save your data.

The problem is that the poor old 1027 can't design to match all this additional capability so I started looking for an alternative.

After looking around I finally settled on the Star 20-10 from *Onyx Business Systems* and after nearly six months of daily hard use, I'm very pleased with it.

ST power! Also had to buy an interface - from *Onyx Computer Centre* - and a printer cable from *Onyx Shop*. I ordered the necessary items by telephone and within three days everything arrived. I'm very grateful to all those suppliers for an outstanding service.

I would like to acknowledge a lot - just extended - on the 20-10.

It comes complete with

Printer and tractor feed external disk switches a comprehensive user manual and the MLD mode - software/disk switch - controlled - which is exceptionally good!

In the near future I want to upgrade my system a minimum with the 1300SE, another disc drive, monitor and keyboard/paper. If anyone would like additional information I would be glad to help.

I would also like to hear from anyone using a different interface - good or bad - and/or different printer.

I am especially interested in the Job 1300 system/info for and PC2 Systems and Communications - Andrew P. Salinas, 15 Huber Class, Marston, Marston, Bedford, MK43 0PT.

Cable? No problem!

I **REPLY** to the letter in the June edition of *Atari User* about monitors. You did not mention Mr. Shiga's first question about the Fujiwara MC08 and the degree of resolution it could deliver with the ST.

After I saw what is the assumption that it gives a super clear and non-blurred picture with my 80088. This may be more help to Mr. Shiga and will certainly be of help to any of his users who are wondering whether to buy a monitor especially when they read what follows.

The letter from Mr. Fujieira complained about the attitude displayed by Sam Young's his enquiry about a cable to connect their 8514CPT monitor with his computer.

Let me tell you what happened when I bought my Fujiwara.

Having decided I liked the look of the MC08 I had asked someone to make me a cable to link it to my 80088.

However when I got the set home I found on unpacking little card made promising to supply a cable to link the MC08 to my computer. About

six popular models were mentioned but then we got out of them.

I duly telephoned Peter Pitt Fujiwara who at once said that their offer did indeed stretch to Atari.

So that Thursday night I fitted in the post, sent card and sent it off. On the Saturday morning I got my cable, connected it to the CV socket and it worked perfectly.

The rest is self-evident, except the telephone call which was not in fact necessary. (New 3843 2) What I call magical!

Incidentally I also have a super small TV in the same price of equipment. It takes my signal yet an MC08 for your Atari - George Wilson, Little Hampton, West Sussex.

WHERE can I get a connecting lead to connect an 80088, 7 and a Grundy TV monitor - P Harding, Rothwell, Leeds.

■ Try Sales Shopper Software Express at a local dealer with an engineer.

Basic time piece

On the February issue you published a program for a digital clock. Have trouble with this, but it is wonderful.

I wanted to incorporate it into a program that I have

written and found that in two hours 15 minutes running, the clock is 24 seconds out.

I assume that it is possible to make it more accurate and would be very grateful if you could advise me how - H.J. Hake, Berk Crown, Worcester.

■ In this month's Five-Line you'll find this very subject listed!

The problem is that the screen refresh is just a fraction under 50 times a second and as the clock program drifts by a few seconds per hour.

Unfortunately, since the program in the February issue is written in machine code it's a little tricky to divide by 40 00000.

So unless you have a fair knowledge of machine code your best answer would be to work with the Basic version. Len Gidding describes in this issue.

Interface interest

I AM delighted to see your latest set of articles on some of the interfacing applications of the Atari 800X, and look forward to the following ones with keen interest.

I am a flight simulator enthusiast and perhaps take an extra interest in the more practical applications that the Atari is capable of.

The problem is that trying to

obtain any technical information about, for instance, the 800X, circuit diagrams and peripheral interfacing requirements is almost impossible.

Could I see a manual? I contacted a supplier instead of a distributor one? Well I find out the pin-out to the cassette recorder. I've stuck - B. Harsted, Wodebridge, Cambrid.

■ The best source of technical information in the workings of both the operating system and the hardware parts on the Atari machine is the Technical Reference Notes available from most Atari dealers.

These notes include the circuit diagrams and SO listings of both the 800X/800 which are not applicable to your case but the rest of the book is worth its weight in gold.

As to your other question the Atari cassette interface adds an FSK decoding circuit in the recorder itself so you can't just hook up an ordinary domestic recorder.

However there are companies which make converters. Contact one of our advertisers for more details.

Device timeouts

IN your *Start-Up/Quit* program why did I get an error message of device timeout on the 7000?

Also I typed Space Wars

Better colour reproduction

I OWN an 80088, 1300SE, printer, monitor/term monitor and some good programs.

My only problem is that my AT is an American model without means to colour, and being 8008 30 it is incompatible with our British system.

Would a European colour compatible video monitor work?

Manufacturers in line with word processing but graphics

and printer that a lot without colour.

Can you please help? - J.H.D. Northwold, Athens, Greece.

■ As you know by now discontinued the NTSC television system used in the States is quite incompatible with either the UK's Pal system or the French Secam which your local TV network uses.

Unfortunately the only

apples for composite video monitors and a Secam monitor will not work with an NTSC computer - or vice versa.

That said if you want to spend just a little bit more you could get a multi-standard monitor which will work with all three systems.

Both JVC and Sony make these and a local TV dealer should be able to advise you on price.

from the Apple II disk drive and when I run it it stopped on the 10.

It took me 12 hours to type it and it is slowing me badly trying to send it out. Could you please help? **Philly Wynell, Little Britain, World**

■ Line 1000 of *Get-it-Right* seems to output control to the printer to show a hard copy version of the checksum to be printed.

A design flaw in the Atari's way of telling you that it showed the printer a given amount of time to respond to the OPEN command, and that time limit expired with no reply from the printer.

Check that the printer is properly connected and that it is on-line and has a stack of paper.

If you're using an RS0 interface also check that works OK.

To test the printer try typing PRINT HELLO and you should get HELLO printed on a paper. If not you may have a faulty printer or interface.

Does it or get this problem sorted out you can run the checksum on *Space Wars* and find out where your typing mistake is. From the volume ten you've given it's difficult to say where the error is, but *Get-it-Right* will tell you.

Dutch contact

I LIVE in The Hague, Holland, and have an Atari 800XL and 1050 disk drive. Could you put me in touch with the other Atari users in the UK? **Rob Ruiters, via: Breda/Breda, 281, 2820 AC The Hague, Netherlands**

Esmerelda error

I HAVE an 800XL. Could you please help me re Atari Line January 1982 game Don't get the Pump - **Rebecca Esmerelda Wilson** I ran the game with a 1010 program recorder I got an error code 8

COULD you help me with a problem concerning a few programs I have written?

I saved them to diskette / normally do, but when I tried to retrieve one, Error 154 appeared and DOS wouldn't load in.

I have checked the programs are still there by loading in DOS off another disk then inserting the disk, and they seem to be there.

I loaded in ERROR 154 and it says "File Number

Missing".

What does this mean and how do I overcome the problem of retrieving my programs? **J. Weston, Bolton**

■ What has happened is that you or someone managed to scramble the disk's contents list. This was probably due to your removing the disk while the drive was still trying to write to it.

The drive has actually overwritten some of the file

information stored on the disk.

SEND FOR Q-&T TO READ V-PAGE MAIL-BOX NEXT Q. - R.T. Holmes, Park North, Brixton

■ You will almost certainly find that your problem is a misquipped number between lines 5700 and 5723.

The READ statement gets its data from here so if there are any mistakes in the data they will be thrown up when the READ attempts to find them.

Revision B bugs

Got reading in the July Mailbag. Thank you much - **Ann C** I put my 8000XL in the test and came up with 98.

I immediately contacted the rest of the family who believe them have the 8000XL and found that there are Rev C's and my English and mine are Rev B's - both computers being bought at once.

Further investigation revealed that the Rev B's would not accept programs that the Rev C's would accept, even after program alterations.

Also, on long programs Rev B's repeatedly displayed errors with eventual keyboard lock-up.

We then contacted the manager of B&B as suggested in Mailbag. His technical

department was referred to. After that the articles in your magazine were interest and as far as we were concerned there is no difference in either computer.

If this is true could you tell us why B's were used to the trouble of working out hardware for a problem that Atari says does not exist?

Unfortunately for us B's do not do anything with the disagreement between your articles and Atari's material.

Can you please clarify the situation? **R.J. Holmes, Welwyn, Devon**

■ To set your mind at rest, there ARE bugs in Revision B. Based on the 8000XL - we were talking through our hats.

We have spoken to an Atari representative about this problem and he assured us that if your machine is genuinely faulty and was bought recently it will be exchanged via your dealer.

If you go up to a shop and say "This machine is Revision B and I want Revision C", they might quite understandably be reluctant to assist you without checking further.

Your best approach is to explain that the machine works frequently, and that you'd like it repaired or exchanged.

If it is out of guaranteed period Atari will provide you with an update upgrade of minimal cost to convert to Revision C.

contents, and these can not be recovered.

You may be able to recover some of the files by formatting a new disk, writing DOS files to it, and then trying to copy each file in turn from the corrupt disk to your new one.

Do not under any circumstances, attempt to write to the old disk until you are recovered what files you can and then reformat it. If you do you'll just get into a worse mess.

Why no cassettes?

MY C64-owning friend asks me "Why don't you buy some *Atariworld/Bradenburg* when the *Kawaks* and *Pinball Demos* (on the new 800XL)?"

So I pay a visit to the local Atari stockist only to be told they are only available on disk.

I've seen both these titles on C64 cassettes, and my friend says they are also available on Atari 800. Why don't Atari sell its Atari range?

The 800XL is a great idea. But the C64 Atari 800 - **Richard Martin, Farnham, Cornwall**

PS Is Atari Over Message available on Atari cassette?

■ There are several good reasons why games which come on tape on the Commodore did sometimes only come on disk for the Atari.

The first and most obvious is the fact that without the turbo loaders available on the Commodore such tape games would take some 15 to 20 minutes to load and their completion time was unacceptably slow.

There is no practical way of designing a turbo loader for the Atari without modifying the hardware as at present.

we're stuck with 800 baud MODEM.

Also to work on all Atari machines including the old 800: the games must be limited to 47k or a time, whereas Commodore 64 games can use up to 62k.

This means that the Atari versions of very large games normally need to re-load from the disc after each level or stage is complete.

Read Over Moscow should be available for the Atari on disc and tape by the time you read this.

Off at a tangent

TAI's tangent function on my 80080 doesn't work. I have tried everything but I just get an ERROR B. Since one of my hobbies is extensive rifle

function is critical. Could you tell me how this can be overcome?

Since I cannot attach the built-in laser for the chronograph and cannot afford to buy the cassette could you please let me know if I can obtain a separate firing? — **B G Foss, Thornbury-entice, Cleveland**

■ The reason you are having trouble using the tangent function is that the many other home computers the Atari does not have one!

When you type TANG on the computer tries to find an array called TAN and the 80080 obviously indicates that it couldn't.

However, as any mathematician will tell you tangent is simply a function of sine over cosine. If you want TANG on you need to look for SIN/COS/80.

Does I tangent that thing isn't a small tangent of a 90 degree angle looked at as sine over

cosine. It's obvious why — 000000 gives zero and you can't divide by zero.

As to the chronograph we hope you found our laser's rapid reply!

Recorder connection

Can you help? My 80080 has a disk drive, but I can't connect my 80080 data recorder to the disk drive AD, external games being cheaper than disc. Or, for that matter directly to the computer.

My main problem is that the D ring has 13 pins and my data recorder has three and one like that.



13-pin D-ring



3-pin



1-pin

Any help will be greatly appreciated.

recovery! Many thanks in advance for any help you can give on this matter — **J G Evans, Cheltenham**

■ Unfortunately there is no way to connect an ordinary tape recorder to the Atari directly. The computer AD uses a special form of coded data called F&B which a normal recorder cannot reproduce.

However you have two choices. There are a number of small devices which will convert the signal from the recorder into a form the computer will understand (starting at about £20).

Alternatively you could buy an Atari data recorder such as the 1010, which is really your best option as that will allow the recorder track to work correctly.

If you do use a normal recorder make sure that it is stereo not mono for this same reason.

ATARI OWNERS

WHAT ARE YOU MISSING?

At PAGE 6 Magazine we recently had a random survey. Here's what some of our existing readers said:

"The groups asked for I am interested"

"The best is Great Britain"

"Big things are coming to the world"

"Big things are coming to the world"

"Big things are coming to the world"

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PAGE 6 - COMPLIMENTING AND EXPANDING THE WORLD OF ATARI

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HAVING covered the theory behind a two-channel mains controller it's now time to fix all the bits and pieces together.

Don't be put off if you've never done any electronics construction before — we're using a commercially made printed circuit board, so all you have to do is plug the various components in and solder them correctly. The more ambitious among you can always try etching your own PCB from the template we printed in the last issue.

Before you do anything else lay the PCB on a piece of strong paper and mark the outline and fixing holes. This will be used as a template when you come to drill the case, saving a great deal of measurement.

You will need a soldering iron rated at between 15 and 25 watts, with a tinned 3mm bit. Anything larger will be too hot for too many components for use on delicate components.

It's also worth buying the special tin — 50% ewag — solder as this is much more likely to go where you want it without forming unsightly blobs. A damp sponge is useful for wiping excess solder from the bit.

Make sure all of your materials are scrupulously clean, as dirt and grease will stop the solder adhering correctly. Hold the soldering iron for its contact with the component lead and PCB track simultaneously.

Melt a small quantity of solder by touching it to the lead and track — not the iron — and keep the heat applied until you see the solder flow evenly on to the track and around the lead.

Remember that small components can be damaged by excessive heat, so don't hold the soldering iron in contact for any longer than necessary and allow the component to cool down again after soldering each lead.

With transistors it's best to solder one lead then turn the board over and make sure the case is vertical before doing the other two.

For extra safety you could attach a temporary heat sink to the components while soldering — a small building type paper clip works quite well.

Figure 1 shows the layout of

Now it's all circuits at GO...

**Part 4 of LEN GOLDING's series on
using your Atari to control devices.
We're ready now to tame the mains**

components on the printed circuit board. Start by fixing the resistors, diodes and transformers followed by the IC socket, terminal blocks, jack sockets and wire links, then the relay (T) and transformer.

Don't fit the fuse holders (C2 and C3) at this stage, since these will become live during normal use and it's safer to keep mains voltages on the PCB's underside during initial testing.

The relays may be wired either way round, but the remaining components must be fitted as shown. Diodes have a black or coloured band at their cathode — or negative — end, the bridge rectifier has + marked and the transistors have a small metal tag nearest their emitters.

The capacitor has a wide grey band printed with chevrons and the number 0 to indicate its negative side.

DO NOT SOLDER THESE COMPONENTS IN PLACE
A CHANGE
DO NOT SOLDER THE TWO 100 OHM 1/4W 5% RESISTORS
ON THIS BOARD
DO NOT SOLDER THE TWO 100 OHM 1/4W RESISTORS
ON THIS BOARD
DO NOT SOLDER THESE TWO 100 OHM 1/4W RESISTORS
ON THIS BOARD

Program 1

The transformer will only fit one way round, but 240V and 0V are marked on the board for extra safety.

Prepare the joystick extension cable by cutting off the unwanted jacket, stripping back about three inches of the outer insulation and taping half an inch of each wire.

Use some kind of continuity tester — a small bulb and battery will do — to find which lead goes to which pin, bearing in mind that cables, even from the same source, may vary in the colours they use.

Now it's time for the preliminary testing. There are three separate stages to the circuit — see last month's diagram — and we can check each one in turn.

Leave the opto isolator out of its socket for the moment and don't connect the mains. Temporarily fit the joystick wires to their PCB terminals and plug the lead into joystick port 1.

Run Program 1 and hold the test LED across pins 1 and 2 of the IC socket, with its cathode — shorter lead — to pin 2. It should light when you type 1 and turn off when you type 0. Do the same with pins 3 and 4 — cathode to pin 3 — this time typing 2 and 0.

If either is at fault, turn the board

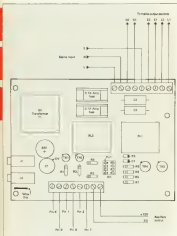


Figure 1 Component layout on the PCB for the mains controller

over and make sure you haven't left any connections unsoldered. Also look for dry joints which have a dull crumbly appearance, and for blobs of solder which have either adhered to the component lead and not the track or have bridged across two tracks.

Remember any joints that look suspicious. When the first test works satisfactorily it means that stage 1 is correct.

Now check again to see that all polarised components – especially the two diodes – are fitted the right way round. Correct polarities are marked on the PCB, and if you get any

of them wrong the components will self-destruct.

Fix the PCB temporarily to a piece of scrap wood or ply using No. 4 wood screws. This will hold it firmly when the mains is connected, and reduces the risk of your touching a live track.

Wipe up the mains supply taking great care from now on, because some of the tracks and the screw heads on the mains terminal block will be live. If everything is wired correctly all the other components will be safe to touch.

With a small screwdriver or a piece

of thin wire bridge across pins 6 and 8 on the IC socket. The right hand relay should operate with an audible click. Do the same with pins 7 and 8, and the left hand relay should work.

If not, disconnect the mains and check all the tracks, joints and polarities again. Especially make sure that the two diodes are connected the correct way round – cathode to 0V – and replace them if you got it wrong.

When all is well insert the apto isolator, making sure that the small dot on its case is closest to the pin 1 position and plug the joystick lead into port 1. Check that the relays operate correctly when you type 1, 2 or 0.

Finally disconnect the mains and joystick leads, then fit the two fuseholders along with C3 and C4.

REMEMBER THAT THE METAL PARTS OF THESE COMPONENTS WILL BECOME LIVE WHEN YOU NEXT CONNECT THE MAINS SUPPLY.

That's the electronics part finished. It only remains to prepare a suitable case – preferably all plastic – and connect the various inputs and outputs if you have to use a box with metal panels. Make sure that all exposed metal is properly earthed.

It's difficult to mark accurate positions for holes and cut slots directly on to a case, so make paper templates and stick them in place using Copydex. They will peel off cleanly when you've finished drilling and cutting.

The mains cable and joystick lead should be run through rubber grommets to prevent chafing, and they will each need some form of cable clamp to take the strain if they are accidentally jerked during use.

Mains appliances can be wired directly to the terminal block, but it's more versatile to use some form of mains plug and socket. Standard 13A wall sockets will work, but Euro style BA mains connectors are smaller, neater and cheaper.

The PCB is fixed using internally threaded spacers, so you can have a

left at each end instead of folding with spacer rail and bolt assemblies.

Attach the spacers to the PCB with (in SBA metal bolts, but use nylon bolts through the plate to ensure that the exposed heads cannot become live under any circumstances. You may need to shorten each relay lead using a sharp craft knife.

Wire the mains cable and joystick lead into their respective terminal blocks and secure them with cable clips.

Fit the mains sockets. Neutral and Earth leads to the PCB terminals marked N and E, and the live leads to the two marked outputs. Then assemble the case and plug in.

The software is easy – just use the first line of Program II to set everything up, then POKR 64016 with 1 to operate relay one, 2 to operate relay two, 3 to operate both together or 0 to turn them both off.

Program II is a simple on/off timer routine, and Program III is an equally simple delay switch. For some ideas on more complex timing operations have a look at this month's Free-Liner's on Page 48.

You can plug external sensors into the jack sockets – try the optimum sulphide cell we used in the first article of this series with Program IV to switch a table lamp on when it gets dark and off again when it is light.

These jacks can supply 5V at about 30mA – total – provided nothing else is drawing current from this or any other joystick port. If you need more power you can draw a nominal 12V at around 300mA from the terminals marked 12V GND and ON on the PCB, but remember that is an unregulated supply and will vary from about 14V to 12V depending on the load.

Details of how you can modify the gadget to handle greater loads and more channels were given last month.

■ Next month we'll be turning our attention to inputs, with continuous power details for a plug-in numeric keypad.

10 POKR 14000, 00, 0000 14000, 000, 0000 0
0000, 000000 00000, 0
00 000
00 000000 00-00000 0000 0000, 0
00 000 000 00 000 0000 0 0000 00

Program I

00 0000 0000, 00000 0000, 000, 0000 0
0000, 00000 0000, 0
00 0000 0000 000 0000 0000 0
00 000 000 00 000 0
00 0000 0000, 0

Program II

00 0000 0000, 00 0000, 000, 0000 0
0000, 00000 0000, 0
00 00 00000000 0000 0000 0000 000
000 00
00 0000 0000, 00000 00

Program IV

PARTS LIST

Resistors:	Maplin order codes
R1 R2 15k	M106
R3 R4 470ohm	M2028
R5 R6 42k	M4100
R7 R8 3.3k	M212
Capacitors:	
C1 470uF 25V 50 electrolytic	
C2 C3 0.047uF 250V AC electrolytic	FF155
Semiconductors:	
TR1, TR2 BC108 transistor	GR100
TR3 TR4 JN3035 transistor	GR100
D1 D2 1N4148 signal diodes	GR100
W1 W2 W3CDS digital meter	GR100
Q1 Q2 Q3 Q4 Q5 Q6 Q7 Q8 Q9 Q10 Q11 Q12 Q13 Q14 Q15 Q16 Q17 Q18 Q19 Q20 Q21 Q22 Q23 Q24 Q25 Q26 Q27 Q28 Q29 Q30 Q31 Q32 Q33 Q34 Q35 Q36 Q37 Q38 Q39 Q40 Q41 Q42 Q43 Q44 Q45 Q46 Q47 Q48 Q49 Q50 Q51 Q52 Q53 Q54 Q55 Q56 Q57 Q58 Q59 Q60 Q61 Q62 Q63 Q64 Q65 Q66 Q67 Q68 Q69 Q70 Q71 Q72 Q73 Q74 Q75 Q76 Q77 Q78 Q79 Q80 Q81 Q82 Q83 Q84 Q85 Q86 Q87 Q88 Q89 Q90 Q91 Q92 Q93 Q94 Q95 Q96 Q97 Q98 Q99 Q100 Q101 Q102 Q103 Q104 Q105 Q106 Q107 Q108 Q109 Q110 Q111 Q112 Q113 Q114 Q115 Q116 Q117 Q118 Q119 Q120 Q121 Q122 Q123 Q124 Q125 Q126 Q127 Q128 Q129 Q130 Q131 Q132 Q133 Q134 Q135 Q136 Q137 Q138 Q139 Q140 Q141 Q142 Q143 Q144 Q145 Q146 Q147 Q148 Q149 Q150 Q151 Q152 Q153 Q154 Q155 Q156 Q157 Q158 Q159 Q160 Q161 Q162 Q163 Q164 Q165 Q166 Q167 Q168 Q169 Q170 Q171 Q172 Q173 Q174 Q175 Q176 Q177 Q178 Q179 Q180 Q181 Q182 Q183 Q184 Q185 Q186 Q187 Q188 Q189 Q190 Q191 Q192 Q193 Q194 Q195 Q196 Q197 Q198 Q199 Q200 Q201 Q202 Q203 Q204 Q205 Q206 Q207 Q208 Q209 Q210 Q211 Q212 Q213 Q214 Q215 Q216 Q217 Q218 Q219 Q220 Q221 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Figure 1

State to encourage. State also should be encouraged
to use for local authorities, as well as for other
concerned persons and organizations.

ELECTRONIC watches are cheap and accurate, so it might seem a bit pointless to turn your expensive computer into a digital clock.

But if your program can measure hours, minutes and seconds it can also influence events in real time, and that opens up all sorts of new possibilities.

You might, for example, want to set a maximum number of hours and minutes for your user to complete a game or measure how long it takes to solve a problem or diagnose the processor when it's time for the kids to go to bed.

If you build the relay box described in this issue you could use a digital clock program to switch electrical appliances on or off at set times during the day.

Alternatively, you could write a countdown program to operate your photographic enlarger: switch off your lawn sprinkler, launch your space shuttle or whatever. So here's how to do it.

Three addresses—18, 19 and 20—are set aside by the operating system for use as an elapsed time counter. Alan calls the three registers a real-time clock, but that's a bit misleading because it doesn't measure hours, minutes and seconds. Instead these registers count vertical blank periods—50 per second—up to a maximum of 16,777,216. To use a clock register in action, try this:

10 PRINT PEEK(20):GOTO 10

You will see the count go up to 255, then reset to 0 and start again. All three of the clock registers work in similar fashion, but they are connected together so that address 18 is incremented whenever 20 overflows and returns to 0, and 19 increments whenever 18 resets.

Since the registers are updated 50 times a second it should be relatively easy to convert their values into seconds, their minutes and hours. Program 1 takes promising, and works reasonably well for short time delays.

Unfortunately the update rate is more like 49.9 times per second so this program is about 0.3 per cent inaccurate. For intervals up to a few minutes the difference is hardly worth bawling about, but it mounts up over longer periods and certainly isn't

precise enough to run a digital clock.

The strategy used in Program 1 is rather different. Here we combine the values from all three registers then divide by 49,854,688 to get the number of seconds which have elapsed since starting the clock. The result is added to the original start time to get current time, then converted back into hours, minutes and seconds.

Since this method operates on much larger numbers than Program 1, any round errors in division tend to disappear and the clock is accurate to within two or three seconds a day. The display may appear to hiccup occasionally as it corrects itself to the nearest second, but this is a small price to pay for accuracy.

Line 10 sets up the strings and asks for the start time in hours, minutes and seconds. The clock starts as soon as the Return key is pressed. Line 20 clears all three registers, converts the start time into its component number of seconds and selects Graphics 2 for the display.

Line 30 reads the three registers, works out how many seconds have elapsed since the clock started then adds this value (G) to the start time (S) to get the current time (C). This is converted back into hours (H), minutes (M) and seconds (S).

The rest of Program 1 simply displays these hours, minutes and

```
10 PRINT "ENTERED AFTER THREE HOURS
  AND SEVEN MINUTES"
20 INPUT H:PRINT "HOURS: ";H
30 INPUT M:PRINT "MINUTES: ";M
40 INPUT S:PRINT "SECONDS: ";S
50 FOR J=1 TO 10:PRINT "COUNTING DOWN...";
  PRINT " ";GOTO 10
60 PRINT "THAT'S IT!"
```



WIDE CHARACTER PRINTING IS AVAILABLE

10 10000	10 1000	10 1000
10 1000	10 1000	10 1000

Clock on for some bright new ideas

seconds, with leading zeros when appropriate. TS holds the clock display, and it is initialized to 00:00:00. The numeric values for hours, minutes and seconds are then converted into string form (HS, MS and CS) using the STR\$ function.

Line 50 uses a variant of the normal technique for joining strings together and ensures that each sub-string appears at its correct position in the display, regardless of whether it has one character or two.

Now a clock which just sits there ticking away to itself is not particularly inspiring, even if you can get it into the lines of Basic!, so the next step is to make it initiate some action when a pre-set time is reached. One way is to delay the GOTO 20 in line 50 and add a few extra lines like this:

```
80 IF H$="10" AND M$="30"
  AND S$="0" THEN GOSUB
  100
70 GOTO 30
100 FORS=64016,1:RETURN
```

Used in conjunction with the relay control box this will switch an electrical appliance on at precisely 10:30am. The clock display may

```
10 FOR J=1 TO 10:PRINT "COUNTING DOWN...";
  PRINT " ";GOTO 10
20 PRINT "THAT'S IT!"
30 INPUT H:PRINT "HOURS: ";H
40 INPUT M:PRINT "MINUTES: ";M
50 INPUT S:PRINT "SECONDS: ";S
60 FOR J=1 TO 10:PRINT "COUNTING DOWN...";
  PRINT " ";GOTO 10
70 PRINT "THAT'S IT!"
80 INPUT H:PRINT "HOURS: ";H
90 INPUT M:PRINT "MINUTES: ";M
100 INPUT S:PRINT "SECONDS: ";S
110 FOR J=1 TO 10:PRINT "COUNTING DOWN...";
  PRINT " ";GOTO 110
120 PRINT "THAT'S IT!"
```



WIDE CHARACTER PRINTING IS AVAILABLE

10 10000	10 1000	10 1000
10 1000	10 1000	10 1000

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JUNE, Frog Jump: Guide for hoppers to leave in the company of the croak chant. **SHOUT:** **Ham Power!** Use the extra folk of energy to good effect! **Substance:** Shake the salt water. **Shake-Shake!** (Use pictures with a speech.) **Random Numbers:** Use random numbers from machine table. **Fifty Fifty.** Can you keep the Fifty Fifty happy in their cell?

AAA Month Five Features the devoted city and local safety **Chambersburg**. Find out what's going on downtown past the **Township Hunt**. The logical thinking is that the **Township** **Featured Generator** keep generating new words all you find out you like **Keywords**. Connect your minds into an open **Quadrant**. Connect and find the most efficient in the field.

ADDENDUM: Assembler: Make marking code programming easier. Front: Decoder: Save money, with this low marking simulation. **Monitor:** Complex patterns made easy. **Protection:** Protect your programs from prying eyes. **Display:** List: Demonstration programs. **Reader:** 1992: Futuristic text adventure. **Touch:** Tables: Demonstration programs.

SEPTEMBER: Make Month. Help increase the RIA search the most important month. **Data Hub.** Connect your machine with security to DATA services. **Display List.** Communication platform. **SecureChange.** Change your Mode II access to a 3029 printer. **WebSite.** Under the RIA conditions.

OCTOBER: *Protonic Tune? But! Memento* (Dang: Luscious memory in two and Jack: Chasing Elia: Demonstration programs) *Wing* (Bugs: Action game for one or two players) *Computer Canvas: Make your own movie masterpiece* *Amesbury Update: Improve music for IBM assembly* *Flora Disc: Make the most of the 1980s* (a series continues)

NOVEMBER: Gay Friends Help-Gay groups invite the gay, lesbian, and transgender community to join a support group. **Gay Friends** is a national organization that provides support and resources for the gay, lesbian, and transgender community. **Gay Friends** is a national organization that provides support and resources for the gay, lesbian, and transgender community. **Gay Friends** is a national organization that provides support and resources for the gay, lesbian, and transgender community.

provide logical functions. **Circle** Date and file **Circle** **Plus** Details of the month. **Categories** machine code and all cases.

PROGRESS Coauthors: Many authors of the famous TV game. **Get It Right!** Adult Users: cost-effective management. **Business Service Systems** project files. **List Utility** Market Information. **Simplex List** Demonstration program. **File Profiles** of the month. **Join's Program** monthly code maintenance.

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BASIC COMPILER: The entire set of Basic Compiler programs from the March to June issues on one tape/disc. Write any routines for your programs that will run at machine code speed. Contains the Compiler, Library and many example programs. (5-8. Requires an assembler.)

new character groups: **Alien Attack**. The game is designed for the mature only with **Gladiator** being program one, **Death Play** the rules on another player at the same time. **Gladiator** 1000 points/pieces system. **Play** Part of the month - **Scorched Earth** (the rules only one).

FEBRUARY *Minneapolis* Prospects to marketplace Minneapolis across **Class** Don't miss down clock with **Flashed** *Minneapolis* **Weekend** Single to play hard on **Master Stroke** The *Minneapolis* presents a card game **Plus** Preview of the month **Downside's List** an advertisement *Minneapolis* an advertisement *Minneapolis*

MAILED Please Play Knight's true program, **Becky's Computer Program**, to accompany the new series **Alvin & Annika**. Find out if you're a

Rating: *Four* Possible at the month. **Mission: In the Lines** – can you keep your head and help (Missions: Book 10)?

[illegible]

RAY Career Escape: Can you help Ted & Joe escape from the laboratory with King Montague's gold? **Paper Monster Program:** accompany the start of the new **Spelling** **Automatic** three weeks school spelling tests.

FLUKE Mean Creator Create hundreds of new means for test equipment. Create Scope plots, **Fluke Waveform Designer** Create your own DATA, shape with the **FlukeWave Editor** **FlukeLines** & Simple One rolling motion. Build it into your test programs.

July Sports News: Macintosh's your sports ship through the treacherous seas of sports. **Player Manager Example:** Prepares to display your Player Manager graphics *Magister*. Two programs to run 200,000 for your new sportsport edition. **Play Along II, Cross** (SBC) type displays on your *Amiga* *Macintosh*. Current issue lists in the *SL*, a *Box*, *SL* *Box*.

ARCANE From the Fruit Fly! Arcade Action in Basic and machine code. **80 Columns Display**—The 80-column display is just 80 lines. **Get It Right**, by popular demand, an updated version of our otherwise program. **Player Missile Program**—Three programs to move your TMC to actually **Five Lines**. More of our utilities in **Base Games**.

SEPTEMBER, Space Shuttle High speed orbit gear. **Player/Music Programs** These programs demonstrate Player/Music facilities. **Five Lines** Five more programs to entertain and amuse. **Geogebra** Five programs to test and use your vector control loop.

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June Issue: Analysis of the 1988 Software Advertising Market - How many Software companies? How many Hardware, Books, and Magazines? Do the Regions and Countries spend 27 pages from our Contributors.

July Issue: Documentation from the 1989 ST 1.0 Conference - Atari's Software Display Unit, Atari's Software Display Unit, Atari's Software Display Unit, Atari's Software Display Unit, Atari's Software Display Unit.

August Issue: Analysis of 1989 Software Production - Atari's Software Display Unit, Atari's Software Display Unit, Atari's Software Display Unit, Atari's Software Display Unit, Atari's Software Display Unit.

September Issue: Atari's Software Display Unit - Atari's Software Display Unit, Atari's Software Display Unit, Atari's Software Display Unit, Atari's Software Display Unit, Atari's Software Display Unit.

October Issue: Atari's Software Display Unit - Atari's Software Display Unit, Atari's Software Display Unit, Atari's Software Display Unit, Atari's Software Display Unit, Atari's Software Display Unit.

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Abstract

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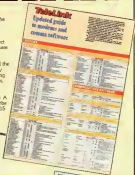
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Vol. 1 No. 7

September 1986

Atari ST User



Starblazer
A first look at the
Rainbird blockbuster

- Megamax C compiler: Was it really worth the wait?
- LaserBase: New-style database put to the test
- The first ST 5-liners for you to type in



Atari is ready to steal the show

ATARI is about to try steps in the prestigious FICOM Show with an awesome display of corporate strength the like of which has never been seen there before. Just one year after it raised its ST standard for the first time in the UK at the same event, the message from the company is clear — the battle for dominance is over and Atari has won.

With an area covering 1,000 square metres its physical presence not only completely overshadows that of its rivals but is also two and a half times greater than it was at the FICOM Show in 1985.

Atari is also rolling out its big guns from the States as a demonstration of the level of importance attached to what is effectively the ST's first birthday bash. Sam Tramiel, the president, will be flying over along with his brother Leonard and Sig Hartmann, the software executive.

Also paying court to Atari will be 40 leading UK software houses who have committed themselves to showcasing the ST's talents. "This time we'll be showing the world what the ST can do," says Alan a Fair Hearing.

Though the companies will all be demonstrating new products at the show they naturally prefer to keep their nature a surprise. However thanks to a little rumouring a few details have come to light.

It seems that games are likely to be prominent — but those of a suitable level of sophistication to warrant exposure to the ST. GamesData from Harvard and Micrograms from Norelco both promise to extract the maximum from the machine, as will Arena from Polytechnic.

There are also more than 20 new business packages to be unveiled on the first day though strange information in this area is very sparse.

Banks will be launching the R-Word, a word processor and R-Switch, a package which enables the use of two programs at the same time. The only other fact to be pointed at the time of writing was there will be a couple of new video digitisers unveiled.

Why all this fuss over just one show? Well the Personal Computer World Show just happens to be home computers where Hinfley is to reveal to Royal Jacob is to ruling. It's where you've got to be seen.

Not that there are any winners named there — in theory that is. There aren't any particular judges or referees or umpires to formalise the proceedings yet the competition remains intense.

For this is the principal occasion during the year when all the leading companies display their wares for computer media and discerning buyer alike.

This year will see the break upstairs or Amstrad attempt to steal the show with their PC clone. But they may find themselves vying with Apple, which also is believed to have a new machine up its corporate sleeve.

The giant Microsoft corporation, which boasts a turnover of \$200 million, has given its blessing to the ST range. It has done this by agreeing to develop a version of the famous Word package for the machines. To be known as Write, it is being re-engineered by Apple to a new technology word processing program.

It is not just the provision of the package that is being seen to be a coup by Atari, but the fact that it comes with it an endorsement for the ST from such a

powerful company. "You could compare it with a cheque from the Pope," observed one industry pundit.

THE ST is soon to be joined with a word processing first — a package for Urdu speakers. Urdu development by Sheffield firm Microsoft, it will arrive with an appropriate overlay for the keyboard.

One of the reasons that no one has bothered to produce an Urdu word processor before now is the complexity of the language. Urdu is written from right to left and has several hundred characters, many of which have only slight differences.

The software house hopes to find a ready market among Pakistanis living in the UK, as Urdu is their official language. It is being seen as a way to familiarise Asian workers with the new technology in their own language.

Also in the pipeline are Bangla and Hindi versions of the word processor.

WHEN Jenny Pope decided to program the family finances into her ST she knew she didn't want to do it in her controlling her feelings this year.

But after a few sleepless nights using Personal Money Manager she said that she didn't want to do it in her controlling her feelings this year.

There was nothing she was really so but cancel our planned two week holiday in the Bahamas," she said. "We stayed at home instead."

Yet the Papes may have mistakenly gone away on their annual vacation without realising that's happened since it's had to be for Jenny's job. For the just happens to be the personal assistant to John Smith, the managing director of Microsoft, the company that produces Personal Money Manager.

He'd asked me to take the package home to personalise myself with it," recalls Jenny. "It was really an excuse when I said in the details of my finances and those of my husband Peter, who happens to be an unemployed teacher."

So you can imagine the shock when it revealed the accurate financial picture. There was nothing we could do under the circumstances but cancel our holiday.

"It's a good job we did. As forecast, our bank statements told us what John showed me were overruns by £200."



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for latest lists



EVER since Atari ST User started this column to help users with their problems I have been flooded with questions about ST Basic. As many of you will know, or will eventually find out, it is made almost useless by a very large number of bugs, which should have been corrected before the language was released.

Unlike bugs in the Basics of other micros those in ST Basic are mostly impossible to ignore or work around. Atari has been working on a new version of Basic for some time, details of which are few and far between. Although it will certainly fix the bugs of the old version it is unlikely to add any features. It is expected to be available before the end of the year and will probably cost little more than the price of a blank disc.

Until it arrives I can only suggest that you try to avoid the bugs in the present version as best as you can or that you buy another language such as Personal Pascal. Module Z or C all of which will give you far better access to the ST's features.

John Mason from Runcorn has a Microvitec monitor attached to his BBC Micro and wonders whether he can attach this to his new ST. Unfortunately the signals that the BBC Micro and the ST output are slightly different and therefore a monitor that is made to attach to the former such as a Microvitec, cannot work with the latter.

It is possible to modify the Microvitec to



Monitor for the ST?

operate with the ST, but this change will mean that the monitor will then no longer operate with the BBC Micro. Another solution would be to buy an ST16 or wait until a third party manufacturer starts making modulator units for the ST. This will enable you to use a television for hi-res colour and a B&W monitor for text work.

Surprisingly the ST's manual doesn't tell you how to copy files with a single disc system and the problem has P.J. Worsten from Chipwell plunged. Here is a step by step guide.

Firstly open up a window for drive A, then select the file that you wish to copy, by clicking on it once. Drag the file to the drive B icon and finally drag the source and target discs as instructed.

It usually takes about three passes to copy

Living with ST Basic bugs...

one file. Although you only have one drive the ST differentiates between the two discs by calling the source A and the target B.

Leads of you have bought Epson LX80s and other printers which allow you to print text in near letter quality mode, many of which must be set to NLQ mode by special control codes from your word processor. Unfortunately 1st Word and most other ST word processors have no special provision for such printers.

To print in NLQ mode you must set up separate printer installation files and select the one you require for each separate document which means that you cannot mix modes within a document.

This is an unsatisfactory method for extending NLQ printing and I hope that word processor manufacturers will look into this problem. Please write to me if you know of a better solution.

David Marston from Chesham has told me of the difficulties he has had when he tried to use his Epson LX80 printer with 1st Word version 1.06. The printer insisted upon wasting two sheets of paper every time he printed out a document.

David says that in the printer installation file there is a command line labelled Vertical Initialisation. If you place an asterisk in front of the line you should have no further problems.

Christophe Berguieret of Antony, France, has written asking where he can obtain the special ST video and disc drive Digi plugs. As these plugs are now considered that are virtually impossible to find in your local electronics shop.

The plugs are on Atari's spare list, but they will not supply the public with such spares. It is therefore best to ask your local dealer to order them from Atari for you.

Finally before you all start writing in to say that last month I said that Degas costs £19.95 let me explain that it was wishful thinking on my part and that I know that the price is really £29.95!



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Launched at last—the superb Starglider

AT the Personal Computer World show in September last year one of the many ST systems on Atari's enormous stand displayed some sample 3D graphics which, we were told, were destined to become a game known as Starglider.

After nearly a year in development, and many a delayed launch, Rainbird Software has announced that by the time you read this Starglider should be on the desktop shelves.

It is set on the planet Novenia, the home of the legendary Starglider. The planet's other inhabitants built giant sentinels to protect themselves from attacks from other worlds. These sentinels were programmed to destroy anything that looked as though it might pose a threat to Novenia, but to protect the famous birds they were programmed to ignore them as they returned from their long migration.

The evil Ignora, seeing this weakness in the Novenia defences, built giant attack craft which closely resembled the birds. The sentinels were fooled and the fake Stargliders got past the defences to wreak havoc and lay waste to the surface of Novenia.

Only small pockets of the populace remained alive some in the protected central capital cities but most on a remote outpost on

Movenia's moon. The Egon race is intent on taking over Novenia and using it as the staging post for their further conquests around the galaxy.

Two young people, Jayson and Katrina, and their ancient, but well armed AQAV—Airborne Ground Attack Vehicle—stand between the Ignora and victory. Leaving their base on Novenia's moon they set out to annihilate the hundreds of enemy Igga fighters, indestructible walkers, tanks and other assorted craft of the Egon attack fleet which were brought to Novenia inside the fake Starglider craft.

Accompanying Jayson and Katrina Agro, their ever complaining robot. Their ultimate aim is to destroy the last remaining enemy Starglider and regain control of the planet.

The accompanying 84 page novella goes into great detail about Jayson and Katrina's adventures in the AQAV and is an essential read as well as supplying vital information and clues. Unless it is read the game cannot be enjoyed to the full.

Your craft is controlled by mouse and keyboard, and playing the game involves flying the AQAV between the power towers on the surface of Novenia, firing on the enemy craft and finding methods for refuelling—the last being the most difficult since it involves dangerous manoeuvres which are detailed in the novella. Your ship is armed with laser cannons and missiles which can only be replenished during a visit to one of the rotating repair depots.

The game sports some amazing vector graphics with full hidden line removal digitised speech and sound effects.

Starglider won the hearts of American ST game players who had a chance to see it demonstrated at the recent CES show in Chicago. Potential fans in the UK will no doubt be given a similar chance at the PCW show in London in a local dealer. The game will operate in either 16 or 32-bit modes and will retail for £24.95.

By
Andrew
Bennett



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MEGAMAX C will be familiar to many people as one of the best C compilers available for the Apple Macintosh. Now that it is finally available for the Atari ST range of computers, how does it stand up compared with the three C packages reviewed in the July issue?

The ST version comes on two single sided discs with a large manual. The standard package consists of a compiler, code optimizer, linker, disassembler, editor, libraries, resource construction program, and to tie it all together - a graphical shell. Overall, you get a complete development system - everything necessary to produce commercial quality software is provided.

To start things moving double click on **SHELL.PRG**, which loads the graphical shell. From here programs can be compiled, linked, edited and run. It also provides a host of other options, including a very useful feature called **Make**, which allows a program to be compiled, linked and run from one option on the drop down menu.

The editor operates under **QEMM** and allows

more than one source file to be edited at a time, each with its own separate window. Editing seems a little strange at first, as the cursor can only be positioned with the mouse - the cursor keys being used to scroll the window. This takes a little time to get used to, but once taken quite in hand. All the usual features such as cut and paste and search and replace are neatly implemented.

After saving the source file and quitting the editor control is returned to the main shell. From here the compiler can be invoked, and it is here that Megamax really shows its colour. The compiler makes only one pass, which leads to very speedy compilations - see figure 1. This single pass converts the C source code directly into binary object code, then, if no problems are encountered, returns to the shell.

If a compilation error has occurred the shell program automatically loads the editor, which then loads the source file together with a file named **Error**. Both files are then displayed with the error file indicating the error type, number and source file line number - making correction very easy indeed. This method is almost as good as the **Modula 2** system of highlighting errors using special markers placed within the source file itself.

When a clean compile has finished and control has been returned to the shell the linker can be called. This produces a machine executable format (**EXE**). As with the compiler, the linker is single pass, which again results in extremely fast generation of final program code. In fact the overall cycle of edit/compile/link with Megamax is considerably faster than that of any other C compiler we have used, including **Hired**, **Alcyon**, **Lattice** & **GST**.

Since the compiler converts the source file directly into object code there is no assembler provided with the system. This is made up for by the inclusion of an on-line assembler facility within the compiler itself. This is very good for small amounts of assembler code that needs to be directly interfaced with C, but can prove difficult to use when more complicated problems

Reviewed
by Peter
Knowles
and
Roger Wier

	DRC	Lattice	GST	RTSlink	Megamax
Sigma Pegasus Vci	4:01 2:32	44:51 3:18	7:83 N/A	562:50 N/A	3:43 2:12
File	18:44	18:44	21:80	N/A	12:55
Link/Make	3:72	*18:32	10:20	N/A	2:72
From	0:46	0:08	0:16	8:10	0:08
Point	12:20	14:04	28:10	N/A	18:51
From	*14:53	125:08	N/A	185:00	52:57

Figure 1. Program execution times on 486/50MHz

are attempted — such as interrupt handling. The reason for this is that Megamax is an assembler; it will only generate position-independent code, whether from a C source or an assembler source. This means that direct addressing of specific memory locations — for example hardware ports and TOS Page 0 variables — has to be done indirectly via registers. Also data must be accessed as address relative, and the assembler data declarations are not fully supported — so you must declare all data in your C source segments.

The linker does not provide the ability to leave symbols in the finished code, which prevents the use of a symbolic debugger. This is a major omission by Megamax, especially considering the fact that the G&T linker — also used by Lattice — supports assembly-level symbolic debugging, even though a program for this is not provided. Only Digital Research gave you a full assembly-level symbolic debugger — called SLD — with their package, although a third-party version is available from Hucot.

The object code format used by Megamax is not the same as anybody else's, which means that only code generated by the Megamax compiler can be linked. This is a shame because object libraries readily available for certain functions will always have to be re-coded for use with Megamax. One of the great advantages of the Megamax linker is that it only includes the modules referenced by the compiler, thus reducing the final PRG file size and also the overall linking time. See Figure 11 for a comparison between the PRG file sizes of various C compilers.

To complete the process, a code-improver, or optimisation pass, is provided. According to the manual it should make programs about 3 per cent faster and 10 per cent smaller — but we have never managed to get as much as a 10 per cent reduction in size of files. All the timings given in Figure 1 are after the code-improver has been run. We attempted to run the Savage benchmark4 printed in the July issue — not that complicated a program — but on return from holiday it still hadn't finished! The Megamax floating-point routines may thus be regarded as somewhat suspect: for example in single precision 5000 times 5000 gives a result of 81000100. To get the correct answer double precision was required: in another program attempting to find the square root of a large number resulted in a negative answer.

The disassembler provided allows generated object code to be reverted to an assembler format. Unfortunately this particular format is not compatible with the Megamax in-line assembler and several text edits have to be

	ORC	Lattice	G&T	Megamax
Byte Compile Time	12688	16331	31130	7125
	360	314	378	90
Empty	6271	10487	31344	1588
File	12520	15167	25434	7183
Init/Link	13038	15481	24244	7481
Frame	13484	15063	23250	6504
Pointer	12482	15123	23080	6561
Root	162778	15835	509	7837

* See Atari User, July 1988

Figure 11. Program size and compile times (continued)

performed before the compiler will accept it as valid input.

To develop high quality software to run under GEM some sort of a resource construction program is vital. Without such utility it is almost impossible to define new pull-down menus and many of the other features that make a GEM program so easy to use. Megamax is the only company apart from Atari themselves, that supplies one as standard.

The Megamax manual is contained in a large three-ring binder and is reasonably well laid out, with a good index. It covers many subjects such as GEMDOS, XENOS, BIOS, VDI and ACS — which is more than most other C manuals do.

Using the C benchmark4 printed in the July issue of Atari User the two tables give the information that many prospective buyers will be waiting for — execution speed, compile time and file size. Clearly Megamax C compiles faster and produces much smaller files. These are great advantages, and may well prove to be the overriding consideration to many prospective buyers — together with its friendly front-end shell and complete manual.

Megamax C does not come cheaply at £187.85 (but these days you only get what you pay for, and in this case it is one of the most complete and well thought out packages currently available. For the future though, who knows? Some of the larger American software houses such as Mark Williams and Wilson already have C compilers available on the ST, and Meta's Autoc C — which will include a full C source symbolic debugger — should follow in a few months time. In the meantime you could do a lot worse than invest in Megamax, especially if you only want to write small programs quickly and efficiently.



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Product: *LaserBase/ST*
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MOST of you will by now have had a chance to play around with the software freedom that came with your new ST, including *DB Master One*, a simple but nevertheless quite usable database. Many other database packages have been released, but they have largely treated the simplicity of ease provided by *DB Master One* for the versatility of *ORACLE* — or its clones at any rate.

Laser Software Inc. has gone some way to bridging that gap with the conversion from the Macintosh of its *LaserBase/ST*. The design philosophy behind *LaserBase/ST* is to provide a full featured data storage program, using all of the features of *ORACLE* to give simple access to the information required.

The program is split into three modules — design, input and report. The first module you will encounter is design, which allows you to tell the computer what type of data you wish to store before you start; you are given the option to define three security passwords, without which an unauthorized person can not access the database.

The first lets the user read the data, the second allows writing and modification of data and the third gives full access to the design section — thereby allowing the database itself to be altered. Once these passwords have been defined — or defined if you wish — you can start to design your database format. Using the mouse you highlight a box for your first field and give it a name.

Each field can be defined as numeric, text, time or date. The size, shape and position is entirely up to you, and you can select from a wide range of type styles, borders and patterns to highlight certain items. You can also define additional boxes, lines, circles and text items — all with the same wide range of effects.

Each of these functions is selected from a panel of buttons on the left of the design screen or by using the function keys. You can create up to 400 entry screens per database, and this system for defining your format is one of the simplest I have come across. The finished results having all of the polish of a specifically-written *ORACLE* entry system.

Once the format has been defined you must select a key field. This will be your quickest method for selecting data to view, so choose it with care as you won't be able to alter it later. This can mean other types of field are extremely flexible and may be altered at will, even after data has been entered. You can even add or delete fields from a database containing hundreds of

LaserBase bridges that gap

records — a very powerful feature which normally would require a lot of juggling of data between files.

From the design screen you use a pull-down menu to load up the input program. The mouse allows you to move about the screen and select fields, and the cursor keys let you move about within each field. The Tab and Shift-Tab keys are used to move forward or backward through the fields, and most types of field will allow optional error checking on entry.

This can cause problems, however, because the system isn't too intelligent for its own good. A stray Return on the end of a data field, for example, seems to confuse the verify routine. Since the Return character can't be seen, *LaserBase* will reject a seemingly quite correct entry. It took me over an hour to find out why one of my fields did not seem to work properly! Also, the fact that the software will word-wrap fields if it gets to the last character is useful but can cause no end of problems if you want a single character field path for 'F' or 'R' responses or a single numeric digit. Since the first character is also the last, it simply moves it on to an imaginary next line, leaving the field you are looking at blank. As a rule, use a minimum of 2 characters per field.

The input section not only allows you to type information in, but also to retrieve data and do simple enquiry operations. You may use the prime screen to set up a sort and search operation, and even save it to disc for later use with the report function. Each line consists of English type instructions, so a search might look something like this:

Sort by (Date) in ascending order,
then by (Invoice Number) in descending order
all contents whose (Balance) is
greater than 10000 pounds.

The computer will ignore the padding words such as ascending and descending and only use the words it understands — such as (Date) and ascending. Although this feature is powerful — even allowing you to define your own words — it is extremely slow. It seems to scan the entire database for each new instruction line, and took about five minutes to sort out a five line criteria on a 100 record database. For a product this powerful it should be able to use spare memory to help speed up the operation, and I'd hate to try

André Willey looks at a new database converted from the Macintosh and finds it an easy to use and versatile package

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There are 122 predefined graphics and you can also add your own to the list by using the built-in editor. You can choose from eight different text fonts and there are 11 different borders to frame your masterpieces.

Extra graphics are available on two Art Gallery discs which can be bought separately for £29.95 each. The program is mouse or cursor key driven, and all choices are made from simple menus.

The 34 page manual gives detailed instructions on how to make a design and each stage is presented in a clear and informative manner. The box also includes information on special ribbons and tips to print out your designs onto T-shirts and other materials. Printing out the designs couldn't be simpler and a larger number of printer drivers are included. However, it is worth checking that your printer is supported before you buy.

Printmaster is a very easy to use program that performs its task well. A definite must if you want to design personalised stationery or want to use your printer to the full.

It's fast and furious ST arcade action

Program: *Red Alert*

Price: £39.95

Supplier: Software Express, 574-576 Alum Road, Alton, Alton Park, Birmingham B8 3BX. Tel: 021-358 3585

RED ALERT from Amiga is based on that old favourite *Missile Command* in that you defend the cities from the computer controlled enemy attack.

Whereas *Missile Command* gave a side view

of several cities and showed enemies and bombs coming from above, *Red Alert* shows an overhead view of either the United States or Europe depending on your choice.

ICBMs come from both sides of the screen and home in on your cities. Submarines also pop up in the oceans and fire the occasional volley. Your defences include missile and laser bases and a laser satellite. The aim and firing of each weapon is controlled by the mouse.

You can choose the placing and number of cities and bases within certain limits even in the end. One point which is surprising is the lack of a printed manual, the only instructions being on a file on the disc. Amiga understandably ask that you write to them for the printed manual enclosing another £7.95. Considering the price of the game you would expect a manual to be thrown in.

Red Alert is one of those fast and furious games where you eventually find yourself swamped by overwhelming odds. It should appeal to arcade addicts who own STs.

Sound	.....	8
Graphics	.....	8
Playability	.....	7
Value for money	.....	8
Overall	.....	8

Help for bad spellers

Program: *Habaspell*

Price: £29.95

Supplier: Hable Systems, Pear Road, North Fetham, Twilling Estate, Fetham, Midhurst W20 8PT. Tel: 01-251 6451

HABASPELL is a IBM-based spell checker for the ST, with over 17,000 words in its user expandable dictionary. A document is first prepared using *Habawriter* or an Amiga-based word processor. It is then loaded into *Habaspell*, where each word is checked against the dictionary.

The program stops at every word it doesn't know and the user has the choice of correcting the word, adding it to *Habaspell*'s dictionary or ignoring it. If the word is ignored so are all further occurrences of it.

Habaspell's relatively small dictionary is annoying at first, but once you have checked your old documents, it will know most of the words you commonly use. *Habaspell* will not operate correctly with *Test Word* as *STWriter* files because it takes some control codes to be part of the next word.

Habaspell works well, but its small dictionary does not compare well with the competition in this field.

Reviewed
by
Andrew
Ralston



Product: Sanding, Frozen Legacy
Price: £29.95
Supplier: Software Express, 514-516 Alton Road
 Road, Alton Park, Birmingham B8 3JQ. Tel:
 021 330 3880

BUMDOG: Frozen Legacy is a science fiction adventure game set in the Jabel Imperial Protectorate, a loosely-knit federation of planets. All action takes place within the Orelans Region, a cluster of 12 systems containing 18 inhabited planets. You may travel within cities, from city to city, from planet to planet and from system to system.... so begin the instructions to this impressive game.

However it is not as easy as it sounds. Your one man star freighter was left to you in the will of an unknown uncle who died under mysterious circumstances and you have no idea how to fly it.

The manual doesn't help much either. Your tutor will be the school of hard knocks - you learn far faster when your life depends on it.

Of the many tasks that you have to undertake in your week's mission one involves the transporting of a religious group held in cryogenic suspension to a colony somewhere on the planet Jorild.

What with plane attacks, muggers, engine malfunctions, buying and selling goods, sailing and sleeping, you've a formula guaranteed to create stress.

Sanding features team action: that is various displays spin up out of the screen as necessary in a manner not dissimilar to IBM windows. You begin the game with a (bird's eye view of the inside of your ship.

The manual supplied with the game gives a brief look at the use of the mouse in manipulating your player and is not exactly comprehensive, but then it's not supposed to be. Re-leaving chunks of information on the designers have helped bring out the atmosphere of the unknown.

The action takes place on several scales. You can move around a city on foot or by using the Pod (detachable ground vehicle - but watch out for parking tickets).

The cities are made up of banks, the ubiquitous Unifilers, trading houses (which store parts, services and residential areas). You can enter all but the last to use their services.

Information, a valuable asset, can be found in a variety of places, notably the potentially dangerous black market exchanges. You can also pick up bargains there or, just as easily, be ripped-off.

The largest scale of travel is inter-system, achieved by using warp drive. The shorter the distance the more likely the journey is to

A taste of things to come



succeed. You are not told this, but take it from me: it's true.

In these regions can hear you curse, especially when the planes turn up. Your shields will absorb some of their energy bolts, but only up to a point. As always... you can shoot them down. If you're good enough, but watch out - your letters aren't of the rapid fire variety and need recharging between shots.

When bits of the Sanding are damaged you can replace them with energy-draining temporary shunts. You can buy replacement parts at your next port of call - assuming, that is, that you survive.

Extensive save game facilities are given in great detail in the manual and though I've always thought there are a bit of a cop-out free do save frustration in starting from the beginning.

Sanding is excellent but it does have a few faults. Although it is a massive game I do feel that it might become a little repetitive after a few weeks playing.

The visuals are very impressive, but there is no sound which lessens the overall effect. If you can afford the asking price do give it a try. It is certainly a taste of things to come for the ST.

**Reviewed
by Jason
Kingsley**

Sound	.....	Score
Graphics	.....	8
Playability	.....	8
Value for money	.....	7
Overall	.....	8

Program: *Phantasy*
Price: £29.95
Distributor: Software Express, 514-516 Allen Road,
 Road, Allen Road, Birmingham B4 2HX. Tel:
 021 339 3888

BEING stout of heart and noble of brow, not to mention stout of pocket, you have decided to try and win fame and fortune by swagging the notorious Black Knights. This outlandish crew, egg-ed on by the evil macromonster Nihiladonius, are currently searching the distant lake of Selver

Phantasy is a Dungeons and Dragons style advent ure in which all commands are motivating your mouse. Unless you are repeating a previously used game the quest begins in the small town of Pelver the first of many. Only in the towns can you gather your party, rest and recuperate, visit your bank manager and buy new equipment.

First recruit your merry band by calling at the local guild. Here you can generate the names, race, professions and characteristics of up to 37 guild members from which you may hand-pick six for your journey. The program determines their attributes—strength, intelligence, dexterity, constitution and charisma.

Other characteristics allocated by the program include lock age, hit points—amount of thumping a character can sustain before shuffling off this mortal coil—gold in bank, magic ability and experience points earned by monster bashing. Also score—general playing strength—and sundry other skills including the ability to attack, parry, pick locks, swim, detect and discern traps, listen for monsters and so on.

Next stop should be the bank where you can withdraw gold pieces from any of your party member's accounts. Being a sensible bunch, all withdrawn gold is pooled. Deposits in the bank from the pool are first allocated to what you determine to be appropriate stores.

With cash (ing) in your pockets you can buy equipment for each member from the armory—weapons, armour, shields, scrolls and magic and healing potions.

Choose carefully, for example it's no good buying a whacking great sword if the poor wretch you've picked it for has got muscles like a newborn kangaroo and barely the strength to wield a knitting needle.

You can pay for training to increase your experience level but may need a certain number of points before they'll agree to take you on. A visit to the local mystic will give you the total current score for your party while popping in to the taverny will revitalise your group.

Now you are ready to leave the town and

Give gran the vapours

begin crossing the wilderness.

The screen displays a stylised map of the immediate area with your party represented by a large cross which is moved using the mouse. On reaching the edge of the screen the picture is replaced by another showing the next portion of countryside.

During the crossing, and sometimes while you are asleep at night, you are sure to encounter monsters who may be hostile or not, but they will certainly not be helpful.

The screen changes to display both your party and the monster. Some good graphics here—many of the miserable animated monster shown are enough to shock the socks off innocent PCs.

During an encounter you can elect to fight surrender, greet the monster, beg mercy or flee. When you fight each member can be instructed to thrust, attack, lunge or parry. You can opt to cast a spell if you have the skill and possess any of the potions available. The result of a battle will be either death or damage to any of the combatants, and the eventual winner wins the spoils.

At most other times you may inspect your party, use potions, cast certain spells—healing, transportation, vision and so on—and enter buildings, towns and dungeons.

If or, more likely, when your party are afflicted you are transported to the Astral Plane. This scene is not for those of a nervous disposition—the foreboding sound effects and some graphics are likely to give you goosey the vapours.

The game is supplied on two discs—game and data—and is handsomely boxed with a superb manual. Although animation, sound and graphics are reasonably good they don't take as much advantage of the ST's capabilities as it would have liked.

Even so there's a richness of detail in Phantasy and the beauty of the game is that it's simple to get into and play. It's the most accessible C&D game around. Very enjoyable, superb fun, and one that should keep you coming back time and again.

Power: 7
Graphics: 6
Playability: 8
Value for money: 8
Overall: 8

Reviewed
 by Bob
 Chappell



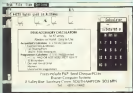
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[illegible]

1. The purpose of the study was to determine the effect of the use of the computer on the learning of the English language.

K.E.C.M.

Abstract

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High-Quality Language Compiler for Atari ST Programmers



MODULA-2/ST

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Model-a-Test offers a Mac-Pie program editor using both mouse/menu and keyboard commands. Editor, Compiler and Friendly CPM. (Sushant Mahesh)

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Abstracts of the 1997 Annual Meeting of the American Psychological Association, Washington, DC, August 1-5, 1997.

[illegible]

HARTMAN & H. SOFTSCHAAL LTD

1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2192, 2193, 2194, 2195, 2196, 2197, 2198, 2199, 2200, 2201, 2202, 2203, 2204, 2205, 2206, 2207, 2208, 2209, 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2217, 2218, 2219, 2220, 2221, 2222, 2223, 2224, 2225, 2226, 2227, 2228, 2229, 2230, 2231, 2232, 2233, 2234, 2235, 2236, 2237, 2238, 2239, 2240, 2241, 2242, 2243, 2244, 2245, 2246, 2247, 2248, 2249, 2250, 2251, 2252, 2253, 2254, 2255, 2256, 2257, 2258, 2259, 2260, 2261, 2262, 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2270, 2271, 2272, 2273, 2274, 2275, 2276, 2277, 2278, 2279, 2280, 2281, 2282, 2283, 2284, 2285, 2286, 2287, 2288, 2289, 2290, 2291, 2292, 2293, 2294, 2295, 2296, 2297, 2298, 2299, 2300, 2301, 2302, 2303, 2304, 2305, 2306, 2307, 2308, 2309, 2310, 2311, 2312, 2313, 2314, 2315, 2316, 2317, 2318, 2319, 2320, 2321, 2322, 2323, 2324, 2325, 2326, 2327, 2328, 2329, 2330, 2331, 2332, 2333, 2334, 2335, 2336, 2337, 2338, 2339, 2340, 2341, 2342, 2343, 2344, 2345, 2346, 2347, 2348, 2349, 2350, 2351, 2352, 2353, 2354, 2355, 2356, 2357, 2358, 2359, 2360, 2361, 2362, 2363, 2364, 2365, 2366, 2367, 2368, 2369, 2370, 2371, 2372, 2373, 2374, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 2384, 2385, 2386, 2387, 2388, 2389, 2390, 2391, 2392, 2393, 2394, 2395, 2396, 2397, 2398, 2399, 2400, 2401, 2402, 2403, 2404, 2405, 2406, 2407, 2408, 2409, 2410, 2411, 2412, 2413, 2414, 2415, 2416, 2417, 2418, 2419, 2420, 2421, 2422, 2423, 2424, 2425, 2426, 2427, 2428, 2429, 2430, 2431, 2432, 2433, 2434, 2435, 2436, 2437, 2438, 2439, 2440, 2441, 2442, 2443, 2444, 2445, 2446, 2447, 2448, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2456, 2457, 2458, 2459, 2460, 2461, 2462, 2463, 2464, 2465, 2466, 2467, 2468, 2469, 2470, 2471, 2472, 2473, 2474, 2475, 2476, 2477, 2478, 2479, 2480, 2481, 2482, 2483, 2484, 2485, 2486, 2487, 2488, 2489, 2490, 2491, 2492, 2493, 2494, 2495, 2496, 2497, 2498, 2499, 2500, 2501, 2502, 2503, 2504, 2505, 2506, 2507, 2508, 2509, 2510, 2511, 2512, 2513, 2514, 2515, 2516, 2517, 2518, 2519, 2520, 2521, 2522, 2523, 2524, 2525, 2526, 2527, 2528, 2529, 2530, 2531, 2532, 2533, 2534, 2535, 2536, 2537, 2538, 2539, 2540, 2541, 2542, 2543, 2544, 2545, 2546, 2547, 2548, 2549, 2550, 2551, 2552, 2553, 2554, 2555, 2556, 2557, 2558, 2559, 2560, 2561, 2562, 2563, 2564, 2565, 2566, 2567, 2568, 2569, 2570, 2571, 2572, 2573, 2574, 2575, 2576, 2577, 2578, 2579, 2580, 2581, 2582, 2583, 2584, 2585, 2586, 2587, 2588, 2589, 2590, 2591, 2592, 2593, 2594, 2595, 2596, 2597, 2598, 2599, 2600, 2601, 2602, 2603, 2604, 2605, 2606, 2607, 2608, 2609, 2610, 2611, 2612, 2613, 2614, 2615, 2616, 2617, 2618, 2619, 2620, 2621, 2622, 2623, 2624, 2625, 2626, 2627, 2628, 2629, 2630, 2631, 2632, 2633, 2634, 2635, 2636, 2637, 2638, 2639, 2640, 2641, 2642, 2643, 2644, 2645, 2646, 2647, 2648, 2649, 2650, 2651, 2652, 2653, 2654, 2655, 2656, 2657, 2658, 2659, 2660, 2661, 2662, 2663, 2664, 2665, 2666, 2667, 2668, 2669, 2670, 2671, 2672, 2673, 2674, 2675, 2676, 2677, 2678, 2679, 26

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